

Utilities and Transportation Commission

Standard Inspection Report for Intrastate Gas Systems

Procedures and Plan Review

S – Satisfactory U – Unsatisfactory N/A – Not Applicable N/C – Not Checked
 If an item is marked U, N/A, or N/C, an explanation must be included in this report.

A completed **Inspection Checklist, Cover Letter and Field Report** are to be submitted to the Chief Engineer within **30 days** from completion of the inspection.

Inspection Report			
Inspection ID/Docket Number	6157		
Inspector Name & Submit Date	Derek Norwood/ 3-24-15		
Sr. Eng Name & Review/Date	Joe Subsits/ 3/25/15		
Operator Information			
Name of Operator:	Cardinal FG	OP ID #:	32176
Name of Unit(s):	Headquarters		
Records Location:	Winlock, WA		
Date(s) of Last Review:	March 29-31, 2010	Inspection Date	January 8, 2015 – March 18, 2015

<p>Inspection Summary:</p> <p>This Procedures and Plan Review included a review of Cardinal FG Operations and Maintenance Manual and Emergency Procedures Manual (EPM). No probable violations and no areas of concern were noted during the review process.</p>

HQ Address: 545 Avery Rd W Winlock, WA 98596	System/Unit Name & Address: N/A	
Co. Official: Steve Smith	Phone No.: N/A	
Phone No.: 360-242-4289	Fax No.: N/A	
Fax No.:	Emergency Phone No.: N/A	
Emergency Phone No.: 360-262-3998	Emergency Phone No.: N/A	
Persons Interviewed	Title	Phone No.
Bob Cosentino	Principal Consultant, CCI	360-200-4959

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GAS SYSTEM OPERATIONS		
Gas Supplier		
Operating Pressure(s):	MAOP (Within last year)	Actual Operating Pressure (At time of Inspection)
Feeder:		
Town:		
Other:	1000 psig	
Does the operator have any transmission pipelines? Yes		

Pipe Specifications:			
Year Installed (Range)	2006	Pipe Diameters (Range)	6 inch, 0.280 inch wall thickness
Material Type	Steel	Line Pipe Specification Used	NPS-6, API 5L, X-52 ERW Steel Pipe
Mileage	3.25	SMYS% (@MAOP) SMYS% (@ AOP)	22.8%

49 CFR PART 191 & CHAPTER 480-93 WAC

REPORTING PROCEDURES		S	U	N/A	N/C
1.	480-93-180 (1)	Immediate Notice of certain incidents to NRC (800) 424-8802 , or electronically at http://www.nrc.uscg.mil/nrchp.html , and additional report if significant new information becomes available. Operator must have a written procedure for calculating an initial estimate of the amount of product released in an accident. (Amdt. 192-115, 75 FR 72878, November 26, 2010, eff. 1/1/2011). .191.5 Section 9.1.3, Procedure P-6	X		
2.		Reports (except SRCR and offshore pipeline condition reports) must be submitted electronically to PHMSA at http://portal.phmsa.dot.gov/pipeline unless an alternative reporting method is authorized IAW with paragraph (d) of this section. (Amdt. 191-115, 75 FR 72878, November 26, 2010, eff. 1/1/2011). 191.7 Section 9.1.4	X		
3.		Telephonic Reports to UTC Pipeline Safety Incident Notification 1-888-321-9144 (Within 2 hours) for events which; 480-93-200(1) Section 9.2.1			
4.		(a) Results in a fatality or personal injury requiring hospitalization; Section 9.2.1(a)(I)	X		
5.		(b) Results in damage to the property of the operator and others of a combined total exceeding fifty thousand dollars; Section 9.2.1(a)(II)	X		
6.		(c) Results in the evacuation of a building, or high occupancy structures or areas Section 9.2.1(a)(III)	X		
7.		(d) Results in the unintentional ignition of gas; Section 9.2.1(a)(IV)	X		
8.		(e) Results in the unscheduled interruption of service furnished by any operator to twenty-five or more distribution customers;			X
9.		(f) Results in a pipeline or system pressure exceeding the MAOP plus ten percent or the maximum pressure allowed by proximity considerations outlined in WAC 480-93-020 ; Section 9.2.1(a)(V)	X		
10.		(g) Is significant, in the judgment of the operator, even though it does not meet the criteria of (a) through (e) of this subsection; or Section 9.2.1(a)(VI)	X		
11.		Telephonic Reports to UTC Pipeline Safety Incident Notification 1-888-321-9146 (Within 24 hours) for; 480-93-200(2) Section 9.2.2	X		
12.		(a) The uncontrolled release of gas for more than two hours; Section 9.2.2(a)(I)	X		
13.		(b) The taking of a high pressure supply or transmission pipeline or a major distribution supply pipeline out of service; Section 9.2.2(a)(II)	X		

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REPORTING PROCEDURES			S	U	N/A	N/C
14.	480-93-180 (1)	(c) A pipeline or system operating at low pressure dropping below the safe operating conditions of attached appliances and gas equipment; or Section 9.2.2(a)(III)	X			
15.		(d) A pipeline or system pressure exceeding the MAOP. Section 9.2.2(a)(IV)	X			
16.		30 day written incident (federal) reports; (DOT Form F 7100.1) 191.9(a) For Transmission & Gathering Lines; (DOT Form F 7100.2) 191.15(a) Section 9.1.4 30-day follow-up written report Submittal must be electronically to http://portal.phmsa.dot.gov/pipeline (Amtd. 192-115, 75 FR 72878, November 26, 2010, eff. 1/1/2011).	X			
17.		Supplemental incident reports 191.15(c) Section 9.1.3	X			
18.		Written incident reports filed with the commission (within 30 days); and include the following; 480-93-200(4) (a) thru (g) Section 9.2.1(b)	X			
19.	480-93-180 (1)	Supplemental reports filed with the commission 480-93-200(5) Section 9.2.3(d)	X			
20.	480-93-180 (1)	Written report within 5 days of receiving the failure analysis of any incident or hazardous condition due to construction defects or material failure 480-93-200(6) Section 9.2.3	X			
21.		Annual Report (DOT Form PHMSA F-7100.2-1) For Transmission & Gathering 191.17(a) Complete and submit DOT Form PHMSA F 7100-2.1 by March 15 of each calendar year for the preceding year. (NOTE: <i>June 15, 2013 for the year 2012</i>). Section 9.1.1	X			
22.	480-93-180 (1)	Filing Reports of Damage to Gas Pipeline Facilities to the commission. (eff 4/1/2013) (Via the commission's Virtual DIRT system or on-line damage reporting form) 480-93-200(7)				
23.		Does the operator report to the commission the requirements set forth in RCW 19.122.053(3) (a) through (n) 480-93-200(7)(a) Cardinal is a member of DIRT and will report if necessary	X			
24.		Does the operator report the name, address, and phone number of the person or entity that the company has reason to believe may have caused damage due to excavations conducted <u>without facility locates</u> first being completed? 480-93-200(7)(b) See comments	X			
25.		Does the operator retain all damage and damage claim records it creates related to damage events reported under 93-200(7)(b), including photographs and documentation supporting the conclusion that a facilities locate was not completed? 480-93-200(7)(c) See comments Note: Records maintained for two years and made available to the commission upon request.	X			
26.		Does the operator provide the following information to excavators who damage gas pipeline facilities? 480-93-200(8) See comments				
27.		<ul style="list-style-type: none"> Notification requirements for excavators under RCW 19.122.050(1) 200(8)(a) See comments 	X			
28.		<ul style="list-style-type: none"> A description of the excavator's responsibilities for reporting damages under RCW 19.122.053; and 200(8)(b) See comments 	X			
29.		<ul style="list-style-type: none"> Information concerning the safety committee referenced under RCW 19.122.130, including committee contact information, and the process for filing a complaint with the safety committee. 200(8)(c) See comments 	X			
30.		Reports to the commission only when the operator or its contractor observes or becomes aware of the following activities... <ul style="list-style-type: none"> An excavator digs within thirty-five feet of a transmission pipeline, as defined by RCW 19.122.020(26) without first obtaining a facilities locate; (200(9)(a) A person intentionally damages or removes marks indicating the location or presence of gas pipeline facilities. 200(9)(b) See comments 	X			
			Annual Reports filed with the commission no later than March 15 for the proceeding calendar year 480-93-200(10) Section 9.2.4			
31.	480-93-180 (1)	A copy of PHMSA form F-7100.1-1 or F-7100.2-1 annual report required by the PHMSA/OPS 480-93-200(10)(a) Section 9.2.4(a)(I)	X			
32.		Annual report on construction defects or material failures 480-93-200(10)(b) Section 9.2.4(a)(III)	X			
33.		Providing updated emergency contact information to the Commission and appropriate officials 480-93-200(11) Section 9.2.5(a)(I)	X			
34.		Providing daily construction and repair activities reports 480-93-200(12) Section 9.2.6(c)	X			

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REPORTING PROCEDURES			S	U	N/A	N/C
35.	480-93-180 (1)	Submitting copy of DOT Drug and Alcohol Testing MIS Data Collection Form (when required) 480-93-200(13) Section 9.2.7	X			
36.		Each operator must obtain an OPID, validate its OPIDs, and notify PHMSA of certain events at http://portal.phmsa.dot.gov/pipeline 191.22	X			
37.		Safety related condition reports (SRCR) 191.23 Section 9.1.2	X			
38.		Filing the SRCR within 5 days of determination, but not later than 10 days after discovery 191.25; 49 U.S.C. 60139, Subsection (b)(2) Section 9.1.2(c) , Procedure P-5 Note: Operators of gas transmission pipelines that if the pipeline pressure exceeds maximum allowable operating pressure (MAOP) plus the build-up, owner/operator must report the exceedance to PHMSA on or before the fifth day following the date on which the exceedance occurs. The report should be titled “Gas Transmission MAOP Exceedance” and provide the following information: <ul style="list-style-type: none"> • The name and principal address of the operator, date of the report, name, job title, and business telephone number of the person submitting the report. • The name, job title, and business telephone number of the person who determined the condition exists. • The date the condition was discovered and the date the condition was first determined to exist. • The location of the condition, with reference to the town/city/county and state or offshore site, and as appropriate, nearest street address, offshore platform, survey station number, milepost, landmark, and the name of the commodity transported or stored. The corrective action taken before the report was submitted and the planned follow-up or future corrective action, including the anticipated schedule for starting and concluding such action.	X			
39.	192.605(d)	Does the process include instructions enabling personnel who perform operation and maintenance activities to recognize conditions that may potentially be safety-related conditions? Procedure P-5	X			

Required Submission of Data to the National Pipeline Mapping System Under the Pipeline Safety Improvement Act of 2002			S	U	N/A	N/C
49 U.S.C. 60132, Subsection (b) ADB-08-07		Updates to NPMS: Operators are required to make update submissions every 12 months if any system modifications have occurred. Go to http://www.npms.phmsa.dot.gov/submission/ to review existing data on record. Also report no modifications if none have occurred since the last complete submission. Include operator contact information with all updates. Section 9.1.5(c)	X			
RCW 81.88.080		Pipeline Mapping System: Has the operator provided accurate maps (or updates) of pipelines, operating over two hundred fifty pounds per square inch gauge, to specifications developed by the commission sufficient to meet the needs of first responders? No pipeline operating over 250 psig			X	

Comments:
[Item 8-Not a distribution company](#)
[Item 24-30 – Cardinal will provide but due to the very small nature of the facility and very few number of locates received \(approximately 10 valid locates during the life of the facility\) the likelihood of this occurring is very small.](#)

49 CFR PART 192 SUBPART A – GENERAL CHAPTER 480-93 WAC – GAS COMPANIES---SAFETY			S	U	N/A	N/C
40.	480-93-180 (1)	Procedures for notifying new customers, within 90 days , of their responsibility for those selections of service lines not maintained by the operator. §192.16 Section 2.6	X			
41.		Conversion to Service - Any pipelines previously used in service not subject to Part 192? 192.14 Section 6.9	X			

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Comments:

SUBPART B - MATERIALS			S	U	N/A	N/C
		Are minimum requirements prescribed for the selection and qualification of pipe and components for use in pipelines 192.51				
42.	480-93-180 (1)	For steel pipe, manufactured in accordance with and meet the listed specification found under Appendix B 192.55 Section 11.3	X			
		For new plastic pipe, qualified for use under this part if: 192.59(a)				
43.	480-93-180 (1)	<ul style="list-style-type: none"> • It is manufactured in accordance with a listed specification; and 192.59(a)(1) • It is resistant to chemicals with which contact may be anticipated. 192.59(a) (2) 			X	
		For used plastic pipe, qualified for use under this part if: 192.59(b)				
44.	480-93-180 (1)	<ul style="list-style-type: none"> • It was manufactured in accordance with a listed specification; 192.59(b)(1) • It is resistant to chemicals with which contact may be anticipated; 192.59(b)(2) • It has been used only in natural gas service. 192.59(b)(3)(4) • Its dimensions are still within the tolerances of the specification to which it was manufactured; and, 192.59(b) • It is free of visible defects. 192.59(b)(5) 			X	
45.		Marking of Materials 192.63 Section 11.3	X			

Comments:

[Item 43-No new plastic pipe](#)
[Item 44-No used plastic pipe](#)

SUBPART C – PIPE DESIGN						
		Procedures for assuring that the minimum requirements for design of pipe are met				
		For Steel Pipe	S	U	N/A	N/C
46.		Pipe designed of sufficient wall thickness, or installed with adequate protection, to withstand anticipated external pressures and loads that will be imposed on the pipe after installation. 192.103 Appendix D	X			
47.		Design formula for steel pipe. 192.105(a) Appendix D	X			
48.	480-93-180 (1)	Yield strength (S) for steel pipe. 192.107 Appendix D (3.3) , Yield Strength(S)=52,000 psi	X			

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SUBPART C – PIPE DESIGN					
49.	480-93-180 (1)	Nominal wall thickness (t) for steel pipe. 192.109 (a) & (b) Wall Thickness (t) = 0.280" (min) (a) If the nominal wt is not known..... Determined by measuring the thickness of each piece of pipe at quarter points on one end unless..... (b) If the pipe is of uniform grade, size, and thickness and more than 10 lengths of pipeline, only 10 percent of the individual lengths, but not less than 10 lengths, need be measured. The thickness of the lengths that are not measured must be verified by applying a gauge set to the minimum thickness found by the measurement. The nominal wall thickness to be used in the design formula in §192.105 is the next wall thickness found in commercial specifications that is below the average of all the measurements taken. However, the nominal wall thickness used may not be more than 1.14 times the smallest measurement taken on pipe less than 20 inches (508 millimeters) in outside diameter, nor more than 1.11 times the smallest measurement taken on pipe 20 inches (508 millimeters) or more in outside diameter.	X		
50.		Design factor (F) for steel pipe. 192.111 Design Factor (F) = 0.5 (Class 3)	X		
51.		(a) Except as otherwise provided in paragraphs (b), (c), and (d) of this section, the design factor to be used in the design formula in §192.105 is determined in accordance with the following Class location Design factor (F) table. Class 3 Class 1 0.72 , Class 2 0.60 , Class 3 0.50 , Class 4 0.40	X		
52.		(b) A design factor of 0.60 or less must be used in the design formula in §192.105 for steel pipe in Class 1 locations that: (1) Crosses the right-of-way of an unimproved public road, without a casing; (2) Crosses without a casing, or makes a parallel encroachment on, the right-of-way of either a hard surfaced road, a highway, a public street, or a railroad; (3) Is supported by a vehicular, pedestrian, railroad, or pipeline bridge; or (4) Is used in a fabricated assembly, (including separators, mainline valve assemblies, cross-connections, and river crossing headers) or is used within five pipe diameters in any direction from the last fitting of a fabricated assembly, other than a transition piece or an elbow used in place of a pipe bend which is not associated with a fabricated assembly.		X	
53.		(c) For Class 2 locations, a design factor of 0.50, or less, must be used in the design formula in §192.105 for uncased steel pipe that crosses the right-of-way of a hard surfaced road, a highway, a public street, or a railroad.			X
54.		(d) For Class 1 and Class 2 locations, a design factor of 0.50, or less, must be used in the design formula in §192.105 for- (1) Steel pipe in a compressor station, regulating station, or measuring station, and (2) Steel pipe, including a pipe riser, on a platform located offshore or in inland navigable waters.			X
55.		Longitudinal joint factor (E) for steel pipe. 192.113 E=1.0	X		
56.	480-93-180 (1)	Temperature derating factor (T) for steel pipe. 192.115 T=1.0	X		
For Plastic Pipe					
57.	480-93-180 (1)	Subject to the limitations of §192.123, for determining the design pressure for plastic pipe in accordance with either formula listed. 192.121			X
58.		For assuring that the design limitations for plastic pipe are not exceeded. 192.123 (a) thru (e)			X

Comments:

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Item 52,53,54 – Cardinal pipeline is Class 3

SUBPART D – DESIGN OF PIPELINE COMPONENTS			S	U	N/A	N/C
		For the design and installation of pipeline components and facilities, and relating to protection against accidental over-pressuring. 192.141				
59.	480-93-180 (1)	General requirements... 192.143 Section 11.1	X			
60.		Qualifying metallic components. 192.144 (a) & (b)			X	
61.		For steel valves; meeting the minimum requirements of API 6D, or other standard that provides an equivalent performance level. 192.145 (a) thru (e) Section 11.2.4	X			
62.		For each flange or flange accessory (other than cast iron) must meet the minimum requirements of ASME/ANSI B16.5, MSS SP-44, or the equivalent. 192.147 (a) thru (c)			X	
63.		For ensuring that each new transmission line and each replacement of line pipe, valve, fitting, or other line component in a transmission line is designed and constructed to accommodate the passage of instrumented internal inspection devices. 192.150 (a) thru (c) Section 11.2.3	X			
64.		Components fabricated by welding. 192.153 (a) thru (d) Section 11.1	X			
65.		Welded branch connections. 192.155 Section 11.1	X			
66.		Flexibility. 192.159 Section 11.1	X			
67.		Supports and Anchors 192.161(a) (a) thru (f) Section 11.1	X			
		Compressor Stations				
68.	480-93-180 (1)	Compressor stations: Design and construction. 192.163 (a) thru (e)			X	
69.		Compressor stations: Liquid removal. 192.165 (a) & (b)			X	
70.		Compressor stations: Emergency shutdown. 192.167 (a) thru (c)			X	
71.	480-93-180 (1)	Compressor stations: Pressure limiting devices. 192.169 (a) & (b)			X	
72.		Compressor stations: Additional safety equipment. 192.171 (a) thru (e)			X	
73.		Compressor stations: Ventilation. 192.173			X	
74.		Pipe-type and bottle-type holders. 192.175			X	
75.		Additional provisions for bottle-type holders. 192.177			X	
76.	480-93-180 (1)	Transmission line valves.192.179 (a) thru (d) Section 11.2.4	X			
77.		Distribution line valves. 192.181(a) thru (c)			X	
78.	480-93-180 (1)	Vaults: Structural design requirements 192.183 (a) thru (c)			X	
79.		Vaults: Accessibility 192.185 (a) thru (c)			X	
80.		Vaults: Sealing, venting, and ventilation. 192.187 (a) thru (c)			X	
81.		Vaults: Drainage and waterproofing 192.189 (a) thru (c)			X	
82.		Design pressure of plastic fittings 192.191 (a) & (b)			X	
83.		Valve installation in plastic pipe. 192.193			X	
84.		Protection against accidental over-pressuring 192.195 (a) & (b) Section 11.2.5	X			

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SUBPART D – DESIGN OF PIPELINE COMPONENTS			S	U	N/A	N/C
85.	480-93-180 (1)	Control of the pressure of gas delivered from high-pressure distribution systems. 192.197 (a) thru (c)			X	
86.		Except for rupture discs, each pressure relief or pressure limiting device must: 192.199 (a) thru (h)			X	
87.		Required capacity of pressure relieving and limiting stations. 192.201(c)			X	
88.		Instrument, Control, and Sampling Pipe and Components 192.203(a) & (b) Section 11.2.6	X			

Comments:
 Item 60 – No qualifying metallic components
 Item 62 – No flange or flange accessories
 Item 64 – No components fabricated by welding
 Item 68-73 – Cardinal has no compressor stations
 Item 74, 75 – Cardinal has no holders
 Item 77 – Cardinal has no distribution line valves
 Item 78-81 – Cardinal has no vaults
 Item 82, 83 – Cardinal has no plastic fittings/pipe
 Item 85 – Cardinal does not receive gas from a high pressure distribution system
 Item 86, 87 – Cardinal does not have pressure relief devices

SUBPART E – WELDING OF STEEL IN PIPELINES			S	U	N/A	N/C
WAC 480-93-080 – WELDER & PLASTIC JOINER IDENTIFICATION and QUALIFICATION						
89.		Welding procedures must be qualified under Section 5 of API 1104 or Section IX of ASME Boiler and Pressure Code (2001 ed.) by destructive test. Amdt. 192-103 pub 06/09/06, eff. 07/10/06. .225(a) Section 11.5.2	X			
90.		Retention of welding procedure – details and test .225(b) Section 11.5.2(vi)	X			
91.	480-93-180(1)	Welders must be qualified by Section 6 of API 1104 (20th edition 2007, including errata 2008) or Section IX of the ASME Boiler and Pressure Vessel Code (2007 edition, July 1, 2007) , except that a welder qualified under an earlier edition than currently listed in 192.7 may weld, but may not requalify under that earlier edition. (Amdt 192-114 Pub. 8/11/10 eff. 10/01/10). Section 11.5.3	X			
92.		Welders may be qualified under section I of Appendix C to weld on lines that operate at < 20% SMYS . .227(b)			X	
		Oxyacetylene welders may qualify under 49 CFR § 192 Appendix C, but may only weld the following size pipe: 480-93-080(1)(a)	S	U	N/A	N/C
93.	480-93-180 (1)	<ul style="list-style-type: none"> • Nominal two-inch or smaller branch connections to nominal six-inch or smaller main or service pipe. 480-93-080(1)(a)(i) 			X	
94.		<ul style="list-style-type: none"> • Nominal two-inch or smaller below ground butt welds 480-93-080(1)(a)(ii) 			X	
95.		<ul style="list-style-type: none"> • Nominal four-inch or smaller above ground manifold and meter piping operating at 10 psig or less. 480-93-080(1)(a)(iii) 			X	
96.	480-93-180(1)	<ul style="list-style-type: none"> • Appendix C Welders re-qualified 2/Yr (7.5Months) 480-93-080(1)(a)(iv) Section 11.5.4 (d) 	X			
97.		Use of testing equipment to record and document essential variables 480-93-080(1)(b) (eff 6/02/05) Section 11.5.2(a)(iii)	X			
98.		Qualified written welding procedures must be located on-site where welding is being performed 480-93-080(1)(d) Section 11.5.2(d)	X			
99.		Identification and qualification cards/certificates w/name of welder/joiner, their qualifications, date of qualification and operator whose qualification procedures were followed. 480-93-080(3) (eff 6/02/05) Section 11.5.2(c)	X			
100.		To weld on compressor station piping and components, a welder must successfully complete a destructive test .229(a) Section 11.5.4(a)	X			
101.		Welder must have used welding process within the preceding 6 months .229(b) Section 11.5.4(b)	X			
102.		A welder qualified under .227(a)... .229(c)				
103.		480-93-180(1)	<ul style="list-style-type: none"> • May not weld on pipe that operates at \geq 20% SMYS unless within the preceding 6 calendar months the welder has had one weld tested and found acceptable under the 	X		

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		sections 6 or 9 of API Standard 1104; may maintain an ongoing qualification status by performing welds tested and found acceptable at least twice per year , not exceeding 7½ months ; may not requalify under an earlier referenced edition. .229(c)(1) Section 11.5.4				
104.		<ul style="list-style-type: none"> May not weld on pipe that operates at ≥20% SMYS unless is tested in accordance with .229(c)(1) or re-qualifies under .229(d)(1) or (d)(2). .229(c)(2) Section 11.5.4 	X			
		Welders qualified under .227(b) may not weld unless: .229(d)	S	U	N/A	N/C
105.	480-93-180(1)	<ul style="list-style-type: none"> Re-qualified within 1 year/15 months, or .229(d)(1) Section 11.5.4 	X			
106.		<ul style="list-style-type: none"> Within 7½ months but at least twice per year had a production weld pass a qualifying test .229(d)(2) Section 11.5.4 	X			
107.		Welding operation must be protected from weather .231 Section 11.5.5(a)	X			
108.		Miter joints (consider pipe alignment) .233			X	
109.		Welding preparation and joint alignment .235 Section 11.5.5(a)	X			
110.		Visual inspection must be conducted by an individual qualified by appropriate training and experience to ensure: .241(a) thru (c) Section 11.5.5(a)	X			
111.		Nondestructive testing of welds must be performed by any process, other than trepanning, that clearly indicates defects that may affect the integrity of the weld .243 (a) thru (f) Section 11.5.5(b)	X			
112.		Repair or removal of defects.245 (a) thru (c) Section 11.5.6	X			
		<ul style="list-style-type: none"> Sleeve Repair – low hydrogen rod (Best Practices –ref. API 1104 App. B, In Service Welding) 				

Comments:

- Item 92 – Cardinal welders do not qualify under this part
- Item 93-95 – Cardinal does not use OAW
- Item 108 – Miter joints are not allowed on Cardinal pipeline

SUBPART F - JOINING OF PIPELINE MATERIALS OTHER THAN BY WELDING WAC 480-93-080 – WELDER & PLASTIC JOINER IDENTIFICATION and QUALIFICATION			S	U	N/A	N/C
113.		Joining of plastic pipe .281				
114.		A plastic pipe joint that is joined by solvent cement, adhesive, or heat fusion may not be disturbed until it has properly set. Plastic pipe may not be joined by a threaded joint or miter joint. 281(a)			X	
115.		Each solvent cement joint on plastic pipe must comply with the following: .281(b)			X	
116.		<ul style="list-style-type: none"> The mating surfaces of the joint must be clean, dry, and free of material which might be detrimental to the joint. .281(b)(1) 			X	
117.		<ul style="list-style-type: none"> The solvent cement must conform to ASTM Designation: D 2513. .281(b)(2) 			X	
118.		<ul style="list-style-type: none"> The joint may not be heated to accelerate the setting of the cement. .281(b)(3) 			X	
119.		Each heat-fusion joint on plastic pipe must comply with the following: .281(c)				
120.	480-93-180(1)	<ul style="list-style-type: none"> A butt heat-fusion joint must be joined by a device that holds the heater element square to the ends of the piping, compresses the heated ends together, and holds the pipe in proper alignment while the plastic hardens. .281(c)(1) 			X	
121.		<ul style="list-style-type: none"> A socket heat-fusion joint must be joined by a device that heats the mating surfaces of the joint uniformly and simultaneously to essentially the same temperature. .281(c)(2) 			X	
122.		<ul style="list-style-type: none"> An electrofusion joint must be joined utilizing the equipment and techniques of the fittings manufacturer or equipment and techniques shown, by testing joints to the requirements of §192.283(a)(1)(iii), to be at least equivalent to those of the fittings manufacturer. .281(c)(3) 			X	
123.		<ul style="list-style-type: none"> Heat may not be applied with a torch or other open flame. .281(c)(4) 			X	
124.		Each adhesive joint on plastic pipe must comply with the following: .281(d)				
125.		<ul style="list-style-type: none"> The adhesive must conform to ASTM Designation: D 2517. .281(d)(1) 			X	

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126.		<ul style="list-style-type: none"> The materials and adhesive must be compatible with each other. .281(d)(1) 			X	
127.		Each compression type mechanical joint on plastic pipe must comply with the following: .281(e)				
128.		<ul style="list-style-type: none"> The gasket material in the coupling must be compatible with the plastic. .281(e)(1) 			X	
129.		<ul style="list-style-type: none"> A rigid internal tubular stiffener, other than a split tubular stiffener, must be used in conjunction with the coupling. .281(e)(2) 			X	
130.	480-93-180(1)	Before any written procedure established under §192.273(b) is used for making plastic pipe joints by a heat fusion, solvent cement, or adhesive method, the procedure must be qualified by subjecting specimen joints made according to the procedure to the following tests: .283(a)				
131.		The burst test requirements of— .283(a)(1)				
132.		<ul style="list-style-type: none"> Thermoplastic pipe: paragraph 6.6 (sustained pressure test) or paragraph 6.7 (Minimum Hydrostatic Burst Test) or paragraph 8.9 (Sustained Static pressure Test) of ASTM D2513 .283(a)(1)(i) 			X	
133.		<ul style="list-style-type: none"> Thermosetting plastic pipe: paragraph 8.5 (Minimum Hydrostatic Burst Pressure) or paragraph 8.9 (Sustained Static Pressure Test) of ASTM D2517; or .283(a)(1)(ii) 			X	
134.		<ul style="list-style-type: none"> Electrofusion fittings for polyethylene pipe and tubing: paragraph 9.1 (Minimum Hydraulic Burst Pressure Test), paragraph 9.2 (Sustained Pressure Test), paragraph 9.3 (Tensile Strength Test), or paragraph 9.4 (Joint Integrity Tests) of ASTM Designation F1055. .283(a)(1)(iii) 			X	
135.		For procedures intended for lateral pipe connections, subject a specimen joint made from pipe sections joined at right angles according to the procedure to a force on the lateral pipe until failure occurs in the specimen. If failure initiates outside the joint area, the procedure qualifies for use; and, .283(a)(2)			X	
136.		For procedures intended for non-lateral pipe connections, follow the tensile test requirements of ASTM D638, except that the test may be conducted at ambient temperature and humidity If the specimen elongates no less than 25 percent or failure initiates outside the joint area, the procedure qualifies for use. .283(a)(3)			X	
137.		Before any written procedure established under §192.273(b) is used for making mechanical plastic pipe joints that are designed to withstand tensile forces, the procedure must be qualified by subjecting five specimen joints made according to the procedure to the following tensile test: .283(b)				
138.	480-93-180(1)	<ul style="list-style-type: none"> Use an apparatus for the test as specified in ASTM D 638 (except for conditioning). .283(b)(1) 			X	
139.		<ul style="list-style-type: none"> The specimen must be of such length that the distance between the grips of the apparatus and the end of the stiffener does not affect the joint strength. .283(b)(2) 			X	
140.		<ul style="list-style-type: none"> The speed of testing is 0.20 in. (5.0 mm) per minute, plus or minus 25 percent. .283(b)(3) 			X	
141.		<ul style="list-style-type: none"> Pipe specimens less than 4 inches (102 mm) in diameter are qualified if the pipe yields to an elongation of no less than 25 percent or failure initiates outside the joint area. .283(b)(4) 			X	
142.		<ul style="list-style-type: none"> Pipe specimens 4 inches (102 mm) and larger in diameter shall be pulled until the pipe is subjected to a tensile stress equal to or greater than the maximum thermal stress that would be produced by a temperature change of 100° F (38° C) or until the pipe is pulled from the fitting. If the pipe pulls from the fitting, the lowest value of the five test results or the manufacturer's rating, whichever is lower must be used in the design calculations for stress. .283(b)(5) 			X	
143.		<ul style="list-style-type: none"> Each specimen that fails at the grips must be retested using new pipe. .283(b)(6) 			X	
144.		<ul style="list-style-type: none"> Results pertain only to the specific outside diameter, and material of the pipe tested, except that testing of a heavier wall pipe may be used to qualify pipe of the same material but with a lesser wall thickness. .283(b)(7) 			X	
145.			A copy of each written procedure being used for joining plastic pipe must be available to the persons making and inspecting joints. .283(c)			X
146.		Pipe or fittings manufactured before July 1, 1980, may be used in accordance with procedures that the manufacturer certifies will produce a joint as strong as the pipe. .283(d)			X	

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147.	480-93-180(1)	No person may make a plastic pipe joint unless that person has been qualified under the applicable joining procedure by: .285(a)					
148.		<ul style="list-style-type: none"> Appropriate training or experience in the use of the procedure; and .285(a)(1) 			X		
149.		<ul style="list-style-type: none"> Making a specimen joint from pipe sections joined according to the procedure that passes the inspection and test set forth in paragraph (b) of this section. .285(a)(2) 			X		
150.		The specimen joint must be: .285(b)					
151.		<ul style="list-style-type: none"> Visually examined during and after assembly or joining and found to have the same appearance as a joint or photographs of a joint that is acceptable under the procedure; and .285(b)(1) 			X		
152.		<ul style="list-style-type: none"> In the case of a heat fusion, solvent cement, or adhesive joint; .285(b)(2) 			X		
153.		Tested under any one of the test methods listed under §192.283(a) applicable to the type of joint and material being tested; .285(b)(2)(i)			X		
154.		Examined by ultrasonic inspection and found not to contain flaws that may cause failure; or .285(b)(2)(ii)			X		
155.		Cut into at least three longitudinal straps, each of which is: .285(b)(2)(iii)			X		
156.		480-93-180(1)	Visually examined and found not to contain voids or discontinuities on the cut surfaces of the joint area; and .285(b)(2)(iii)(A)			X	
157.		480-93-180(1)	Deformed by bending, torque, or impact, and if failure occurs, it must not initiate in the joint area. .285(b)(2)(iii)(B)			X	
158.		480-93-180(1)	A person must be requalified under an applicable procedure, if during any 12-month period that person: .285(c)				
159.			<ul style="list-style-type: none"> Does not make any joints under that procedure; or .285(c)(1) 			X	
160.			<ul style="list-style-type: none"> Has 3 joints or 3 percent of the joints made, whichever is greater, under that procedure that are found unacceptable by testing under §192.513. .285(c)(2) 			X	
161.			Each operator shall establish a method to determine that each person making joints in plastic pipelines in the operator's system is qualified in accordance with this section. .285(d)			X	
		Plastic pipe joiners re-qualified 1/Yr (15 Months) 480-93-080 (2)					
162.	480-93-180(1)	<ul style="list-style-type: none"> Qualified written plastic joining procedures must be located on-site where plastic joining is being performed. 480-93-080(2)(a) 			X		
163.		<ul style="list-style-type: none"> Plastic pipe joiners re-qualified if no production joints made during any 12 month period 480-93-080(2)(b) (eff 6/02/05) 			X		
164.		<ul style="list-style-type: none"> Tracking production joints or re-qualify joiners 1/Yr (12Months) 480-93-080(2)(c) (eff 6/02/05) 			X		
165.	480-93-180(1) / 192.273(b)	No person may carry out the inspection of joints in plastic pipes required by §§192.273(c) and 192.285(b) unless that person has been qualified by appropriate training or experience in evaluating the acceptability of plastic pipe joints made under the applicable joining procedure. .287			X		

Comments:
Item 113-165 – Cardinal has no plastic pipe

SUBPART G – CONSTRUCTION REQUIREMENTS for TRANSMISSION LINES and MAINS			S	U	N/A	N/C
166.	480-93-180(1)	Compliance with specifications or standards. 192.303 Section 11.4.1	X			
167.		Inspection of each transmission line and main during construction 192.305 Section 11.4.2	X			
168.		Inspection of materials 192.307 Section 11.4.2	X			
169.		Repair of steel pipe 192.309 (a) thru (e) Section 10.4	X			
170.		Repair of plastic pipe. 192.311			X	
171.		Bends and elbows. 192.313 (a) thru (c) Section 11.4.8	X			

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172.		Wrinkle bends in steel pipe. 192.315 (a) & (b)			X	
173.		Protection from hazards 192.317 (a) thru (c) Section 11.4.3	X			
174.		Installation of Pipe in a ditch 192.319 (a) thru (c) Section 11.4.4	X			
175.		Installation of plastic pipe. 192.321 (a) thru (h)			X	
480-93-178 WAC PROTECTION OF PLASTIC PIPE			S	U	N/A	N/C
176.	480-93-180(1)	Procedures for the storage, handling, and installation of plastic pipelines in accordance with the latest applicable manufacturer's recommended practices. 480-93-178(1)			X	
177.		Stated acceptable time limit for maximum cumulative ultraviolet light exposure 480-93-178 (2)			X	
178.		Separation requirements when installing plastic pipelines parallel to other underground utilities 480-93-178 (4)			X	
179.		Separation requirements when installing plastic pipelines perpendicular to other underground utilities 480-93-178 (5)			X	
180.		Casings 192.323 (a) thru (d)			X	
181.		Casing of pipelines. 480-93-115 (1) thru (4)			X	
182.		Underground clearance. 192.325 (a) thru (d). Section 11.4.6	X			
183.		Cover. 192.327 (a) thru (g) Section 11.2.7	X			

Comments:

[Item 170, 175-179- No plastic pipe in system](#)
[Item 172 – Cardinal does not allow wrinkle bends in the pipeline](#)
[Item 180, 181 – Cardinal has no casings](#)

SUBPART H - CUSTOMER METERS, SERVICE REGULATORS, and SERVICE LINES

			S	U	N/A	N/C
184.	480-93-180 (1)	Meters and service regulators installed at locations as prescribed under 192.353 (a) thru (d)			X	
185.		Service regulator vents and relief vents installed and protected from damage. Vaults housing meters and regulators protected from loading due to vehicular traffic. 192.355 (a) thru (c)			X	
186.	480-93-180 (1)	Meters and regulators installed to minimize stresses and insure that potential releases vent to outside atmosphere. 192.357 (a) thru (d)			X	
480-93-140 WAC SERVICE REGULATORS			S	U	N/A	N/C
187.	480-93-180 (1)	Procedures for installing, operating, and maintaining service regulators in accordance with federal and state regulations, and manufacturer's recommended installation and maintenance practices. 480-93-140(1)			X	
188.		Procedures for inspecting and testing service regulators and associated safety devices during the initial turn-on, and when a customer experiences a pressure problem. Testing must include..... 480-93-140(2)			X	
189.	480-93-180 (1)	Minimum service line installation requirements as prescribed under 192.361 (a) thru (g)			X	
190.		Location of service-line valves as prescribed under 192.365 (a) thru (c)			X	
191.		General requirements for locations of service-line connections to mains and use of compression fittings 192.367 (a) thru (b)(2)			X	
192.		Connections of service lines to cast iron or ductile iron mains. 192.369 (a) thru (b)			X	
193.		Provisions for new service lines not in use 192.379 (a) thru (c)			X	
194.		EFV performance requirements §192.381 (a) thru (e)			X	
195.		Excess flow valves, does the program must meet the requirements outlined in §192.38?			X	

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SUBPART H - CUSTOMER METERS, SERVICE REGULATORS, and SERVICE LINES					
196.		Customer notification in accordance with §192.383.			X

Comments:

Item 184-196 – Cardinal has no customer meters, service regulators, or service lines

SUBPART I - CORROSION CONTROL			S	U	N/A	N/C
197.	480-93-180(1)	Corrosion procedures established for the Design, Operations, Installation & Maintenance of CP systems, carried out by, or under the direction of, a person qualified in pipeline corrosion control methods .453 Section 11.2.2	X			
198.	480-93-180(1)	For pipelines installed after July 31, 1971 , buried segments must be externally coated and .455 (a) cathodically protected within one year after construction (see exceptions in code) .455 (b) Section 11.2.2	X			
199.	480-93-180(1)	Aluminum may not be installed in a buried or submerged pipeline if exposed to an environment with a natural pH in excess of 8 (see exceptions in code) .455 (c)			X	
200.	480-93-180(1)	Adequate guidance included for the installation of aluminum in a submerged or buried pipeline? .455(e)			X	
201.	480-93-180(1)	All effectively coated steel transmission pipelines installed prior to August 1, 1971 , must be cathodically protected .457 (a) Section 11.2.2	X			
202.	480-93-180(1)	If installed before August 1, 1971 , cathodic protection must be provided in areas of active corrosion for: bare or ineffectively coated transmission lines, and bare or coated c/s, regulator sta., meter sta. piping, and (except for cast iron or ductile iron) bare or coated distribution lines. .457 (b)			X	
203.		Written procedures explaining how cathodic protection related surveys, reads, and tests will be conducted. 480-93-110(4) Section 4.4	X			
204.		Examination of buried pipeline when exposed: if corrosion is found, further investigation is required .459 Section 4.2	X			
205.		Recording the condition of all underground metallic facilities each time the facilities are exposed. 480-93-110(6) Section 4.2	X			
206.		CP test reading on all exposed facilities where coating has been removed 480-93-110(8) (eff 6/02/05) Section 4.2	X			
207.		Procedures must address the protective coating requirements of the regulations. External coating on the steel pipe must meet the requirements of this part. .461 Section 4.3	S	U	N/A	N/C
208.		Cathodic protection level according to Appendix D criteria .463 Section 4.4.1	X			
209.		Pipe-to-soil monitoring (1 per yr/15 months) .465(a) Section 4.4.2(b)	X			
210.		Rectifier monitoring (6 per yr/2½ months) .465(b)			X	
211.		Interference bond monitoring (as required) .465(c) Section 4.4.2(c)	X			
212.		Remedial action taken within 90 days (Up to 30 additional days if other circumstances. Must document) 480-93-110(2) Section 4.4.1(f)	X			
213.		Electrical surveys (closely spaced pipe to soil) on bare/unprotected lines, cathodically protect active corrosion areas (1 per 3 years/39 months) .465(e)			X	
214.		Electrical Isolation .467(a-e) Section 4.5	X			
215.		Sufficient test stations to determine CP adequacy .469 Section 4.4.3(a)	X			
216.	Test lead maintenance .471 Section 4.4.3(c)	X				
217.	Interference currents .473 Section 4.5.3	X				

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SUBPART I - CORROSION CONTROL			S	U	N/A	N/C
218.	480-93-180(1)	Proper procedures for transporting corrosive gas? .475(a)			X	
219.		Written program to monitor for indications of internal corrosion. The program must also have remedial action requirements for areas where internal corrosion is detected. 480-93-110(7) (eff 6/02/05) Section 4.7.2(b)	X			
220.		Removed pipe must be inspected for internal corrosion. If found, the adjacent pipe must be inspected to determine extent. Certain pipe must be replaced. Steps must be taken to minimize internal corrosion. .475(b) Section 4.7.2(b)	X			
221.		Systems to reduce internal corrosion Amdt 192- (no number) Pub. 4/23/07, eff. 5/23/07			X	
222.		(a) New construction .476			X	
223.		(b) Exceptions – offshore pipeline and systems replaced before 5/23/07			X	
224.		(c) Evaluate impact of configuration changes to existing systems			X	
225.		Internal corrosion control coupon (or other suit. Means) monitoring (2 per yr/7½ months) .477			X	
226.		Each exposed pipe must be cleaned and coated (see exceptions under .479(c)) .479(a) Section 4.6	X			
227.		Offshore splash zones and soil-to-air interfaces must be coated Section 4.6	X			
228.		• Coating material must be suitable .479(b) Section 4.6.1(a)	X			
229.		Coating is not required where operator has proven that corrosion will: .479(c)				
230.		1. Only be a light surface oxide, or .479(c)(1)			X	
231.		2. Not affect safe operation before next scheduled inspection .479(c)(2)			X	
232.		Written atmospheric corrosion control monitoring program. The program must have time frames for completing remedial action. 480-93-110(9) (eff 6/02/05) Section 4.6.1 (e)(f)(g)	X			
233.		Atmospheric corrosion control monitoring (1 per 3 yrs/39 months onshore; 1 per yr/15 months offshore) .481(a) Section 4.6.1(b)	X			
234.		Special attention required at soil/air interfaces, thermal insulation, under dis-bonded coating, pipe supports, splash zones, deck penetrations, spans over water .481(b) Section 4.6.1(b)	X			
235.		Protection must be provided if atmospheric corrosion is found (per §192.479) .481(c) Section 4.6.1(c)	X			
236.		Replacement and required pipe must be coated and cathodically protected (see code for exceptions) .483 Section 10.1.3	X			
237.		Procedures to replace pipe or reduce the MAOP if general corrosion has reduced the wall thickness? .485(a) Section 4.8.3(b)	X			
238.		Procedures to replace/repair pipe or reduce MAOP if localized corrosion has reduced wall thickness (unless reliable engineering repair method exists)? .485(b) Section 4.8.3(b)	X			
239.		Procedures to use Rstreng or B-31G to determine remaining wall strength? .485(c) Section 4.8.3(a)	X			
240.		Remedial measures (distribution lines other than cast iron or ductile iron) .487			X	
241.	Remedial measures (cast iron and ductile iron pipelines) .489			X		
242.	Records retained for <u>each</u> cathodic protection test, survey, or inspection required by 49 CFR Subpart I, and chapter 480-93 WAC. 480-93-110 Section 3.2.2(d)	X				
243.	Corrosion control maps and record retention (pipeline service life or 5 yrs) .491 Section 3.2.5	X				
WAC 480-93-110 Corrosion Requirements			S	U	N/A	N/C
243.	480-93-180(1)	Casings inspected/tested annually not to exceed fifteen months 480-93-110(5)			X	
244.		Casings w/no test leads installed prior to 9/05/1992. Demonstrate other acceptable test methods 480-93-110(5)(a)			X	
245.		Possible shorted conditions – Perform confirmatory follow-up inspection within 90 days 480-93-110(5)(b)			X	
246.		Casing shorts cleared when practical 480-93-110(5)(c)			X	

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SUBPART I - CORROSION CONTROL			S	U	N/A	N/C
247.		Shorted conditions leak surveyed within 90 days of discovery. Twice annually/7.5 months 480-93-110(5)(d)			X	
248.	480-93-180(1)	CP Test Equipment and Instruments checked for accuracy/intervals (Mfct Rec or Opr Sched) 480-93-110(3) Section 4.9	X			

Comments:

Item 199-200 – Cardinal has no aluminum components
Item 202 – Cardinal has no pipeline installed before August 1, 1971
Item 210 – Cardinal uses sacrificial anodes in place of rectifiers
Item 213 – Cardinal has no unprotected pipe
Item 218 – The natural gas transported in Cardinal pipeline is free of corrosive properties
Item 221 – Cardinal has no new construction after May 23, 2007
Item 222 – Cardinal has no offshore pipelines
Item 223 – Cardinal has no configuration changes to their pipeline
Item 224 – Cardinal does not transport corrosive material so corrosion control coupons are not used
Item 228-230 – Cardinal has coatings present
Item 239 – Cardinal has no distribution lines
Item 240 – Cardinal has no cast iron or ductile iron lines
Item 243-247 – Cardinal has no casings

SUBPART J – TEST REQUIREMENTS			S	U	N/A	N/C
249.		Procedures to ensure that the provisions found under 192.503(a) thru (d) for new segments of pipeline, or Return to Service segments of pipeline which have been relocated or replaced are met. Section 11.5.7	X			
250.		Strength test requirements for steel pipeline to operate at a hoop stress of 30 percent or more of SMYS. 192.505 (a) thru (e)			X	
251.	480-93-180(1)	Test requirements for pipelines to operate at a hoop stress less than 30 percent of SMYS and at or above 100 psig. 192.507 (a) thru (c) Section 11.5.7	X			
252.		Test requirements for pipelines to operate below 100 psig. 192.509 (a) & (b)			X	
253.		Test requirements for service lines. 192.511 (a) thru (c)			X	
254.		Test requirements for plastic pipelines. 192.513 (a) thru (d)			X	
255.		Environmental protection and safety requirements. 192.515 (a) & (b) Section 11.5.7.5	X			
256.		Records 192.517 Refer also to 480-93-170 (7) (a-h) below. Section 11.5.7.7	X			

Comments:

Item 250 – Cardinal pipeline does not operate above 30% SMYS
Item 252 – Cardinal does not operate under 100 psig
Item 253 – Cardinal has no service lines
Item 254 – Cardinal has no plastic pipe

WAC 480-93-170 PRESSURE TEST PROCEDURES			S	U	N/A	N/C
257.		Notification in writing, to the commission, at least three business days prior to any pressure test of a gas pipeline that will have a MAOP that produces a hoop stress of twenty percent or more of the SMYS 480-93-170(1) Section 11.5.7.6	X			
258.		<ul style="list-style-type: none"> • In Class 3 or Class 4 locations, as defined in 49 CFR § 192.5, or within one hundred yards of a building, must be at least eight hours in duration. 480-93-170(1)(a) Section 11.5.7.3 	X			

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259.	480-93-180(1)	<ul style="list-style-type: none"> When the test medium is to be a gas or compressible fluid, each operator must notify the appropriate public officials so that adequate public protection can be provided for during the test. 480-93-170(1)(b) Section 11.5.7.3 	X			
260.		<ul style="list-style-type: none"> In an emergency situation where it is necessary to maintain continuity of service, the requirements of subsection (1) of this section and subsection (1)(a) may be waived by notifying the commission by telephone prior to performing the test. 480-93-170(1)(c) Section 11.5.7.3 	X			
261.		Minimum test pressure for any steel service line or main, must be determined by multiplying the intended MAOP by a factor determined in accordance with the table located in 49 CFR § 192.619 (a)(2)(ii). 480-93-170(2) Section 2.4	X			
262.	480-93-180(1)	Re-testing of service lines broken, pulled, or damaged, resulting in the interruption of gas supply to the customer, must be pressure tested from the point of damage to the service termination valve prior to being placed back into service. 480-93-170(4)			X	
263.		Maintain records of all pressure tests performed for the life of the pipeline and document information as listed under 480-93-170(7) (a-h). Section 11.5.7.7	X			
264.		Maintain records of each test where multiple pressure tests are performed on a single installation. 480-93-170(9)			X	
265.		Pressure testing equipment must be maintained, tested for accuracy, or calibrated, in accordance with the manufacturer's recommendations. 480-93-170(10) Section 11.5.7.4	X			
266.		<ul style="list-style-type: none"> When there are no manufacturer's recommendations, then tested at an appropriate schedule determined by the operator. Section 11.5.7.4 	X			
267.	<ul style="list-style-type: none"> Test equipment must be tagged with the calibration or accuracy check expiration date. Section 11.5.7.4 	X				

Comments:

[Item 257 – WAC says 3 days, Cardinal’s manual says 5 days](#)
[Item 262 – Cardinal has no service lines](#)

SUBPART K - UPRATING

			S	U	N/A	N/C
		Provisions for meeting the minimum requirements for increasing maximum allowable operating pressure (uprating) for pipelines.				
268.	480-93-180(1)	General requirements. 192.553 (a) thru (d)			X	
269.		Upgrading to a pressure that will produce a hoop stress of 30 % or more of SMYS in steel pipelines. 192.555 (a) thru (e)			X	
270.		Upgrading: Steel pipelines to a pressure that will produce a hoop stress less than 30 % of SMYS: (plastic, iron, and ductile iron pipelines.) 192.557 (a) thru (d)			X	
WAC 480-93-155 - UPRATING						
271.	480-93-180(1)	Notification of uprate and submission of written plan 480-93-155 (1)			X	
272.		Content of written plan... 480-93-155 (1) (a) thru (j)			X	
273.		Upgrades must be based on a previous or current pressure test that will substantiate the intended MAOP. 480-93-155 (2)			X	

Comments:

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Item 264 – Cardinal does/did not perform multiple pressure tests
 Item 268-273 – Cardinal’s pipeline cannot be uprated due to design limitations

SUBPART L - OPERATIONS			S	U	N/A	N/C
274.	480-93-180(1) / 192.605(a)	Procedural Manual Review – Operations and Maintenance (1 per yr/15 months) 192.605(a) Note: Including review of OQ procedures as suggested by PHMSA - ADB-09-03 dated 2/7/09 Section 1.13	X			
275.		Availability of construction records, maps, operating history to operating personnel 192.605(b)(3) Section 3.2.4	X			
276.		Start up and shut down of the pipeline to assure operation within MAOP plus allowable buildup 192.605(b)(5) Section 6.3	X			
277.		Periodic review of personnel work – effectiveness of normal O&M procedures 192.605(b)(8) Section 1.10	X			
278.		Taking adequate precautions in excavated trenches to protect personnel from the hazards of unsafe accumulations of vapors or gas, and making available when needed at the excavation, emergency rescue equipment, including a breathing apparatus and a rescue harness and line 192.605(b)(9) Section 5.8	X			
279.		Routine inspection and testing of pipe-type or bottle-type holders 192.605(b)(10)			X	
280.		Responding promptly to a report of a gas odor inside or near a building, unless the operator’s emergency procedures under §192.615(a)(3) specifically apply to these reports. 192.605(b)(11) Section 3.7 , Section 8.3	X			
281.		Implementing the applicable control room management procedures required by 192.631. (Amdt. 192- 112, 74 FR 63310, December 3, 2009, eff. 2/1/2010). .605(b)(12)			X	

Comments:

Item 279 – Cardinal has no pipe-type or bottle-type holders
 Item 281 – Cardinal has no control room

SUBPART L – OPERATIONS						
ABNORMAL OPERATING PROCEDURES – TRANSMISSION LINES						
			S	U	N/A	N/C
		Procedures for responding to, investigating, and correcting the cause of: 192.605(c)(1)				
282.	480-93-180(1) / 192.605(a)	<ul style="list-style-type: none"> • Unintended closure of valves or shut downs 192.605(c)(1)(i) Section 8.5.1 	X			
283.		<ul style="list-style-type: none"> • Increase or decrease in pressure or flow rate outside of normal operating limits 192.605(c)(1)(ii) Section 8.5.1 	X			
284.		<ul style="list-style-type: none"> • Loss of communications 192.605(c)(1)(iii) Section 8.5.1 	X			
285.		<ul style="list-style-type: none"> • The operation of any safety device 192.605(c)(1)(iv) Section 8.5.1 	X			
286.		<ul style="list-style-type: none"> • Malfunction of a component, deviation from normal operations or personnel error 192.605(c)(1)(v) Section 8.5.1 	X			
287.		Checking variations from normal operation after abnormal operations ended at sufficient critical locations 192.605(c)(2) Section 8.6	X			
288.		Notifying the responsible operating personnel when notice of an abnormal operation is received 192.605(c)(3) Section 8.4.2	X			
289.		Periodic review of personnel work – effectiveness of abnormal operation procedures 192.605(c)(4) Section 8.4.3	X			

Comments:

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SUBPART – L CHANGE in CLASS LOCATION PROCEDURES			S	U	N/A	N/C
290.	480-93-180(1) / 192.605(a)	Class location study - Does the process include a requirement that the operator conduct a study whenever an increase in population density indicates a change in the class location of a pipeline segment operating at a hoop stress that is more than 40% SMYS? 192.609 (a-f) Section 3.5.4	X			
291.		Confirmation or revision of MAOP - Does the process include a requirement that the MAOP of a pipeline segment be confirmed or revised within 24 months whenever the hoop stress corresponding to the established MAOP is determined not to be commensurate with the existing class location? 192.611 Final Rule Pub. 10/17/08, eff. 12/22/08. Section 3.5.8	X			

SUBPART – L CONTINUING SURVEILLANCE PROCEDURES			S	U	N/A	N/C
292.	192.613	Procedures for surveillance and required actions relating to change in class location, failures, leakage history, corrosion, substantial changes in CP requirements, and unusual operating and maintenance conditions 192.613(a) Section 3.4	X			
293.	192.613	Procedures requiring MAOP to be reduced, or other actions to be taken, if a segment of pipeline is in unsatisfactory condition 192.613(b) Section 3.4.5	X			

SUBPART – L DAMAGE PREVENTION PROGRAM PROCEDURES			S	U	N/A	N/C	
294.	480-93-180(1) / 192.605(a)	Participation in a qualified one-call program, or if available, a company program that complies with the following: Section 5.2.1	X				
295.		Identify persons who engage in excavating .614(c)(1) Section 5.2.2(a)	X				
296.		Provide notification to the public in the One Call area .614(c) (2) Section 5.2.2(c)	X				
297.		Provide means for receiving and recording notifications of pending excavations .614(c) (3) Section 5.2.2(d)	X				
298.		Provide notification of pending excavations to the members .614(c) (4) Section 5.2.2(e) , Procedure P-1	X				
299.		Provide means of temporary marking for the pipeline in the vicinity of the excavations .614(c) (5) Section 5.6	X				
300.		Provides for follow-up inspection of the pipeline where there is reason to believe the pipeline could be damaged .614(c) (6) 1. Is the inspection done as frequently as necessary during and after the activities to verify the integrity of the pipeline? 2. In the case of blasting, does the inspection include leakage surveys? Section 5.6, 5.7	X				
301.		Damage Prevention (Operator Internal Performance Measures)		S	U	N/A	N/C
302.		Does the operator have a quality assurance program in place for monitoring the locating and marking of facilities? Do operators conduct regular field audits of the performance of locators/contractors and take action when necessary? (CGA Best Practices v. 6.0, Best Practice 4-18. Recommended only, not required)				X	
303.		Does operator include performance measures in facility locating services contracts with corresponding and meaningful incentives and penalties?				X	
304.	Do locate contractors address performance problems for persons performing locating services through mechanisms such as re-training, process change, or changes in staffing levels?				X		
305.	Does the operator periodically review the Operator Qualification plan criteria and methods used to qualify personnel to perform locates? OQM Section 2.3.7		X				
306.	Review operator locating and excavation <u>procedures</u> for compliance with state law and regulations. Section 1.10		X				
307.	Are locates being made within the timeframes required by state law and regulations? Examine record sample.		X				
308.	Are locating and excavating personnel properly <u>qualified</u> in accordance with the operator's		X				

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		Operator Qualification plan and with federal and state requirements? Locating and Excavating are covered tasks in the OQM and personnel are qualified before performing				
309.		Informational purposes only. Not Required. Does the pipeline operator voluntarily submit pipeline damage statistics into the UTC Damage Information Reporting Tool (DIRT)? Operator may register at https://identity.damagereporting.org/cgareg/control/login.do Y X N	X			
310.		<p style="text-align: center;">PHMSA Areas of Emphasis:</p> <ul style="list-style-type: none"> Does the operator have directional drilling/boring procedures which include taking actions necessary to protect their facilities from the dangers posed by drilling and other trenchless technologies? 			X	
311.		<ul style="list-style-type: none"> Does the operator review records of accidents and failures due to excavation damage to ensure causes of failures are addressed to minimize the possibility of recurrence? 			X	

Comments:

[Item 302-304 – Cardinal does not have any contract locators](#)
[Item 310 – Cardinal does not drill/bore](#)
[Item 311 – Cardinal has not had any accidents or failures due to excavation](#)

SUBPART – L EMERGENCY PROCEDURES			S	U	N/A	N/C
312.	480-93-180(1) / 192.615	Receiving, identifying, and classifying notices of events which require immediate response by the operator .615(a)(1) Note: Including third-party damage EPM Section 2.4, 2.5	X			
313.		Establish and maintain communication with appropriate public officials regarding possible emergency .615(a)(2) EPM Section 6	X			
314.		Prompt response to each of the following emergencies: .615(a)(3)	X			
315.		(i) Gas detected inside a building EPM Appendix D	X			
316.		(ii) Fire located near a pipeline EPM Appendix E	X			
317.		(iii) Explosion near a pipeline EPM Appendix E	X			
318.		(iv) Natural disaster EPM Appendix G	X			
319.		Availability of personnel, equipment, instruments, tools, and material required at the scene of an emergency .615(a)(4) EPM Section 8	X			
320.		Actions directed towards protecting people first, then property .615(a)(5) Note: Including third-party damage where there is a possibility of multiple leaks and underground migration into nearby buildings. EPM Section 4.1.2	X			
321.		Emergency shutdown or pressure reduction to minimize hazards to life or property .615(a)(6) EPM Appendix H	X			
322.	480-93-180(1) / 192.615	Making safe any actual or potential hazard to life or property .615(a)(7) EPM Section 4	X			
323.		Notifying appropriate public officials required at the emergency scene and coordinating planned and actual responses with these officials .615(a)(8) EPM Section 6	X			
324.		Instructions for restoring service outages after the emergency has been rendered safe .615(a)(9) EPM Section 5.2	X			
325.		Investigating accidents and failures as soon as possible after emergency .615(a)(10) EPM Section 5.1	X			
326.		Actions required to be taken by a controller during an emergency in accordance with 192.631. (Amdt. 192-112, 74 FR 63310, December 3, 2009, eff. 2/1/2010). .615(a)(11)			X	
327.		Furnishing applicable portions of the emergency plan to supervisory personnel who are responsible for emergency action .615(b)(1) EPM Section 1.6.4	X			
328.		Training appropriate employees as to the requirements of the emergency plan and verifying effectiveness of training .615(b)(2) EPM Section 1.5.2	X			
329.		Reviewing activities following emergencies to determine if the procedures were effective .615(b)(3) EPM Section 1.9	X			

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330.		Establish and maintain liaison with appropriate public officials, such that both the operator and public officials are aware of each other's resources and capabilities in dealing with gas emergencies .615(c)(1-4); ADB-05-03 EPM Section 6	X			
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Comments:
[Item 326 – Cardinal has no controller](#)

SUBPART – L PUBLIC AWARENESS PROGRAM PROCEDURES (Also in accordance with API RP 1162)			S	U	N/A	N/C
331.		Public Awareness Program in accordance with API RP 1162 (Amdt 192-99 pub. 5/19/05, eff. 06/20/05 and Amdt 192 – not numbered pub 12/13/07 eff. 12/13/07). .616				
332.	480-93-180(1) / 192.605(a)	The operators program must specifically include provisions to educate the public, appropriate government organizations, and persons engaged in excavation related activities on: .616(d) Section 5.3	X			
333.		(1) Use of a one-call notification system prior to excavation and other Section 5.3.5(a)	X			
334.		(2) Possible hazards associated with unintended releases from a gas pipeline facility; Section 5.3.5(b), (c)	X			
335.		(3) Physical indications of a possible release; Section 5.3.5(d)	X			
336.		(4) Steps to be taken for public safety in the event of a gas pipeline release; Section 5.3.5(h)	X			
337.		Does program include activities to advise affected municipalities, school districts, businesses, and residents of pipeline facility locations. .616(e) Section 5.3	X			
338.		The operator's program and the media used must be comprehensive enough to reach all areas the operator transports gas. .616(f) Section 5.3	X			
339.		Is the program conducted in English and any other languages commonly understood by a significant number of the population? .616(g) Section 5.3.2	X			
340.		Operations of a master meter			X	
341.		Operators of a Master Meter or petroleum gas system (unless the operator transports gas as a primary activity) must develop/implement a written procedure to provide it's customers public awareness messages twice annually: .616(j) (1) A description of the purpose and reliability of the pipeline; (2) An overview of the hazards of the pipeline and prevention measures used; (3) Information about damage prevention; (4) How to recognize and respond to a leak; and (5) How to get additional information.			X	
342.	IAW API RP 1162, the operator's program should be reviewed for effectiveness within four years of the date the operator's program was first completed. <u>For operators in existence on June 20, 2005</u> , who must have completed their written programs no later than June 20, 2006, the first evaluation is due no later than June 20, 2010 . .616(h)			X		

SUBPART – L FAILURE INVESTIGATION PROCEDURES			S	U	N/A	N/C
343.	480-93-180(1) / 192.617	Analyzing accidents and failures including laboratory analysis where appropriate to determine cause and prevention of recurrence .617 Section 8.8	X			

Comments:
[Item 340-342 – Cardinal does not operate a master meter system](#)

SUBPART – L MAOP PROCEDURES			S	U	N/A	N/C
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Note: If the operator is operating under a Special Permit, a Waiver or 192.620, the inspector needs to review the special conditions of the Special Permit, Waiver or refer to Attachment 1 for additional .620 requirements.																					
344.	480-93-180(1)	Establishing MAOP so that it is commensurate with the class location .619 Section 2.4, Appendix D	X																		
345.	192.605(a)	MAOP cannot exceed the lowest of the following:																			
346.		• Design pressure of the weakest element; .619(a)(1) Appendix D (2.2)	X																		
347.		• Test pressure divided by applicable factor .619(a)(2) Appendix D (2.5)	X																		
348.	480-93-180(1) / 192.605(a)	<ul style="list-style-type: none"> The highest actual operating pressure to which the segment of line was subjected during the 5 years preceding the applicable date in second column, unless the segment was tested according to .619(a)(2) after the applicable date in the third column or the segment was updated according to subpart K. Note: For gathering line related compliance deadlines and additional gathering line requirements, refer to Part 192 including this amendment. .619(a)(3) <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="width: 55%;">Pipeline segment</th> <th style="width: 20%;">Pressure date</th> <th style="width: 25%;">Test date</th> </tr> </thead> <tbody> <tr> <td>-- Onshore gathering line that first became subject to this part (other than § 192.612) after April 13, 2006.</td> <td>March 15, 2006, or date line becomes subject to this part, whichever is later.</td> <td>5 years preceding applicable date in second column.</td> </tr> <tr> <td>--Onshore transmission line that was a gathering line not subject to this part before March 15, 2006.</td> <td></td> <td></td> </tr> <tr> <td>Offshore gathering lines.</td> <td>July 1, 1976.</td> <td>July 1, 1971.</td> </tr> <tr> <td>All other pipelines.</td> <td>July 1, 1970.</td> <td>July 1, 1965.</td> </tr> </tbody> </table>	Pipeline segment	Pressure date	Test date	-- Onshore gathering line that first became subject to this part (other than § 192.612) after April 13, 2006.	March 15, 2006, or date line becomes subject to this part, whichever is later.	5 years preceding applicable date in second column.	--Onshore transmission line that was a gathering line not subject to this part before March 15, 2006.			Offshore gathering lines.	July 1, 1976.	July 1, 1971.	All other pipelines.	July 1, 1970.	July 1, 1965.			X	
Pipeline segment	Pressure date	Test date																			
-- Onshore gathering line that first became subject to this part (other than § 192.612) after April 13, 2006.	March 15, 2006, or date line becomes subject to this part, whichever is later.	5 years preceding applicable date in second column.																			
--Onshore transmission line that was a gathering line not subject to this part before March 15, 2006.																					
Offshore gathering lines.	July 1, 1976.	July 1, 1971.																			
All other pipelines.	July 1, 1970.	July 1, 1965.																			
349.		• Maximum safe pressure determined by operator. .619(a)(4) Appendix D (2.6)	X																		
350.		• Overpressure protective devices must be installed if .619(a)(4) is applicable .619(b)			X																
351.	480-93-180(1) 192.605(a)	• The requirements on pressure restrictions in this section do not apply in the following instance. An operator may operate a segment of pipeline found to be in satisfactory condition, considering its operating and maintenance history, at the highest actual operating pressure to which the segment was subjected during the 5 years preceding the applicable date in the second column of the table in paragraph (a)(3) of this section. An operator must still comply with § 192.611. Amdt 192-102 pub. 3/15/06, eff. 04/14/06. Note: For gathering line related compliance deadlines and additional gathering line requirements, refer to Part 192 including this amendment. .619(c)			X																
352.		Refer to Attachment 1 for additional Alternative MAOP requirements. (Amdt. 192- 107, 73 FR 62147, October 17, 2008, eff. 11/17/2008). .620																			
353.		MAOP - High Pressure Distribution Systems .621 Note: New PA-11 design criteria is incorporated into 192.121 & .123 (Final Rule Pub. 12/24/08)			X																
354.		Max./Min. Allowable Operating Pressure - Low Pressure Distribution Systems .623			X																

Comments:

Item 348-Not an option, system was constructed post code
 Item 350 – Cardinal has no overpressure protection devices
 Item 351 – Not an option, system was constructed post code
 Item 353-354 – Cardinal has no distribution lines

WAC 480-93-015	S	U	N/A	N/C
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ODORIZATION PROCEDURES							
355.	480-93-180(1)	Odorization of gas at the proper concentration in air 480-93-015 (1) 192.625(a-f) Section 6.2, Procedure P-10	X				
356.		Use of odorant testing instrumentation/Monthly testing interval 480-93-015 (2) Section 6.2.1(a), Procedure P-10	X				
357.		Odorant Testing Equipment Calibration/Intervals (Annually or Manufacturers Recommendation) 480-93-015 (3) Section 6.2.1(d)	X				
358.	480-93-180(1)	Records maintained for usage, odorant tests performed and equipment calibration (5yrs) 480-93-015(4) Section 6.2, Procedure P-10	X				

Comments:

SUBPART – L TAPPING PIPELINES UNDER PRESSURE PROCEDURES				S	U	N/A	N/C
359.	480-93-180(1)	Hot taps must be made by a qualified crew NDT testing is suggested prior to tapping the pipe. Reference API RP 2201 for Best Practices . .627 Section 6.6.4	X				

SUBPART – L PIPELINE PURGING PROCEDURES				S	U	N/A	N/C
360.	480-93-180(1)	Purging of pipelines must be done to prevent entrapment of an explosive mixture in the pipeline .629 Section 6.5	X				
361.	480-93-180(1)	(a) Lines containing air must be properly purged. Section 6.5.2	X				
362.	480-93-180(1)	(b) Lines containing gas must be properly purged Section 6.5.3, 6.5.4	X				

Comments:

SUBPART – M MAINTENANCE PROCEDURES				S	U	N/A	N/C
363.	480-93-180(1)	Each segment of pipeline that becomes unsafe must be replaced, repaired, or removed from Service .703(b) Section 10.1.2	X				
364.	480-93-180(1)	Hazardous leaks must be repaired promptly .703(c) Section 3.7.4	X				

Comments:

CONTROL ROOM MANAGEMENT PROCEDURES				S	U	N/A	N/C
*	(Amdt. 192-112, 74 FR 63310, December 3, 2009, eff. 2/1/2010) *Cardinal has no control room*						

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*		CONTROL ROOM MANAGEMENT PROCEDURES (Amdt. 192-112, 74 FR 63310, December 3, 2009, eff. 2/1/2010)				S	U	N/A	N/C
		Cardinal has no control room							
.605(a)	.631(a)	(1) This section applies to each operator of a pipeline facility with a controller working in a control room who monitors and controls all or part of a pipeline facility through a SCADA system, except where an operator's activities are limited to: (ii) Transmission without a compressor station, the operator must have and follow written procedures that implement only paragraphs (d) (regarding fatigue), (i) (regarding compliance validation), and (j) (regarding compliance and deviations) of this section.							
	.631(a)	.605(b)(12) Each operator must have and follow written control room management procedures. NOTE: <i>An operator must develop the procedures no later than August 1, 2011 and implement the procedures no later than February 1, 2013.</i>							
	.631(b)	The operator's program must define the roles and responsibilities of a controller during normal, abnormal and emergency conditions including a definition of:							
		(1)	Controller's authority and responsibility.					X	
		(2)	Controller's role when an abnormal operating condition is detected.					X	
		(3)	Controller's role during an emergency					X	
		(4)	A method of recording shift change responsibilities between controllers.					X	
	.631(c)	The operator's program must provide its controllers with the information, tools, processes and procedures necessary to perform each of the following:							
		(1)	Implement sections 1, 4, 8,9,11.2, and 11.3 of API RP 1165 whenever a SCADA System is added, expanded or replaced.					X	
		(2)	Conduct point-to-point verification between SCADA displays and related equipment when changes that affect pipeline safety are made.					X	
		(3)	Test and verify any internal communications plan – at least once a year NTE 15 months.					X	
		(4)	Test any backup SCADA system at least once each year but NTE 15 months.					X	
		(5)	Establish and implement procedures for when a different controller assumes responsibility.					X	
	.631(d)	Each operator must implement and follow methods to reduce the risk associated with controller fatigue, including:							
		(1)	Establishing shift lengths and schedule rotations that provide time sufficient to achieve eight hours of continuous sleep.					X	
		(2)	Educating controllers and supervisors in fatigue mitigation strategies.					X	
		(3)	Training of controllers and supervisors to recognize the effects of fatigue.					X	
		(4)	Establishing a maximum limit on controller hours-of-service.					X	
	.631(e)	Each operator must have a written alarm management plan including these provisions:							
		(1)	Reviewing alarms using a process that ensures that they are accurate and support safe operations.					X	
	(2)	Identifying at least once a year, points that have been taken off SCADA scan or have had alarms inhibited, generated false alarms, or have had forced or manual values for periods of time exceeding that required for maintenance activities.					X		
	(3)	Verifying the alarm set-point values and alarm descriptions once each year NTE 15 months.					X		
	(4)	Reviewing the alarm management plan at least once every calendar year NTE 15 months.					X		
	(5)	Monitoring the content and volume of activity being directed to and required of each controller once each year NTE 15 months.					X		
	(6)	Addressing deficiencies identified through implementation of 1-5 of this section.					X		
.631(f)	Each operator must assure that changes that could affect control room operations are coordinated with the control room personnel by performing the following:								

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CONTROL ROOM MANAGEMENT PROCEDURES (Amdt. 192-112, 74 FR 63310, December 3, 2009, eff. 2/1/2010)		S	U	N/A	N/C
Cardinal has no control room					
	(1) Establishing communications between controllers, management and field personnel when implementing physical changes to the pipeline.			X	
	(2) Requiring field personnel to contact the control room when emergency conditions exist and when field changes could affect control room operations.			X	
	(3) Seeking control room or management participation in planning prior to implementation of significant pipeline changes.			X	
.631(g)	Each operator must assure that lessons learned from its experience are incorporated in to its procedures by performing the following:				
	(1) Reviewing reportable incidents to determine if control room actions contributed to the event and correcting any deficiencies.			X	
	(2) Including lessons learned from the operator’s training program required by this section.			X	
.631(h)	Each operator must establish a controller training program and review its contents once a year NTE 15 months which includes the following elements:			X	
	(1) Responding to abnormal operating conditions (AOCs).			X	
	(2) Using a computerized simulator or other method for training controllers to recognize AOCs			X	
	(3) Training controllers on their responsibilities for communication under the operator’s emergency response procedures.			X	
	(4) Training that provides a working knowledge of the pipeline system, especially during AOCs.			X	
	(5) Providing an opportunity for controllers to review relevant procedures for infrequently used operating setups.			X	

SUBPART - M		S	U	N/A	N/C											
TRANSMISSION LINES - PATROLLING & LEAKAGE SURVEY PROCEDURES																
365.	Patrolling ROW conditions .705(a) Section 3.6.1	X														
366.	Maximum interval between patrols of lines: .705 (b)															
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Class Location</th> <th style="width: 33%;">At Highway and Railroad Crossings</th> <th style="width: 33%;">At All Other Places</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1 and 2</td> <td style="text-align: center;">2/yr (7½ months)</td> <td style="text-align: center;">1/yr (15 months)</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">4/yr (4½ months)</td> <td style="text-align: center;">2/yr (7½ months)</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">4/yr (4½ months)</td> <td style="text-align: center;">4/yr (4½ months)</td> </tr> </tbody> </table>	Class Location	At Highway and Railroad Crossings	At All Other Places	1 and 2	2/yr (7½ months)	1/yr (15 months)	3	4/yr (4½ months)	2/yr (7½ months)	4	4/yr (4½ months)	4/yr (4½ months)	X		
Class Location	At Highway and Railroad Crossings	At All Other Places														
1 and 2	2/yr (7½ months)	1/yr (15 months)														
3	4/yr (4½ months)	2/yr (7½ months)														
4	4/yr (4½ months)	4/yr (4½ months)														
	Section 3.6.4															
367.	Leakage surveys – 1 year/15 months .706 Section 3.8.2	X														
368.	Leak detector equipment survey requirements for lines transporting un-odorized gas (N/A - All pipelines in WA require odorization)			X												

WAC 480-93-185		S	U	N/A	N/C
GAS LEAK INVESTIGATION					
	Procedures for the prompt investigation of any notification of a leak, explosion, or fire, which may involve gas pipelines or other gas facilities. Section 3.7				
369.	480-93-180(1) <ul style="list-style-type: none"> received from any outside source such as a police or fire department, other utility, contractor, customer, or the general public 480-93-185(1) Section 3.7 	X			
370.	480-93-180(1) <ul style="list-style-type: none"> Grade leak in accordance with WAC 480-93-186, and take appropriate action 480-93-185(1) Section 3.7.2 	X			

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371.	480-93-180(1)	<ul style="list-style-type: none"> retain the leak investigation record for the life of the pipeline. 480-93-185(1) Section 1.11.3 	X			
372.	480-93-180(1)	Prevent removal of any suspected gas facility until the commission or the lead investigative authority has designated the release of the gas facility and keep the facility intact until directed by the lead investigative authority 480-93-185(2) Section 8.8	X			
373.	480-93-180(1)	Taking appropriate action when leak indications originating from a foreign source. Notification requirements. 480-93-185(3) Section 3.8.10	X			

WAC 480-93-186 LEAK EVALUATION			S	U	N/A	N/C
374.	480-93-180(1)	Grade leaks as defined in WAC 480-93-18601 to establish the leak repair priority. 480-93-186(1) Section 3.7	X			
375.	480-93-180(1)	Procedure for evaluating the concentration and extent of gas leakage 480-93-186(2) Note: Including third-party damage where there is a possibility of multiple leaks and underground migration into nearby buildings. Section 3.7, Procedure P-8, P-33	X			
376.	480-93-180(1)	Use of a combustible gas indicator to check the perimeter of a leak area. Follow-up inspection on repaired leaks no later than thirty days following repair. 480-93-186(3) Section 3.7	X			
377.	480-93-180(1)	Grade 1 and 2 leaks downgraded once to Grade 3 leak without a physical repair. After downgrade, repair must be made not to exceed twenty-one months 480-93-186(4)			X	

Comments:
[Item 377 – Cardinal does not downgrade leaks without physical repair](#)

WAC 480-93-187 GAS LEAK RECORDS			S	U	N/A	N/C
		Gas leak records must contain, at a minimum, the criteria outlined in 480-93-187 (1-13)				
378.	480-93-180(1)	1) Date and time the leak was detected, investigated, reported, and repaired, and the name of the employee(s) conducting the investigation; 2) Location of the leak (sufficiently described to allow ready location by other qualified personnel); 3) Leak grade; 4) Pipeline classification (e.g., distribution, transmission, service); 5) If reported by an outside party, the name and address of the reporting party; 6) Component that leaked (e.g., pipe, tee, flange, valve); 7) Size and material that leaked (e.g., steel, plastic, cast iron); 8) Pipe condition; 9) Type of repair; 10) Leak cause; 11) Date pipe installed (if known); 12) Magnitude and location of CGI readings left; and 13) Unique identification numbers (such as serial numbers) of leak detection equipment. Section 3.7, Form F-14	X			

Comments:

WAC 480-93-188 GAS LEAK SURVEYS			S	U	N/A	N/C
379.	480-93-180(1)	gas leak surveys using a gas detection instrument covering areas listed in 480-93-188(1)(a-e)	X			

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		Section 3.8.3				
380.		Gas detection instruments tested for accuracy/intervals (Mfct rec or monthly not to exceed 45 days) 480-93-188(2) Section 3.8.6	X			
381.		Surveys conducted according to the minimum frequencies outlined under 480-93-188(3)(a-d) Section 3.8.2	X			
382.		Surveys conducted under the following circumstances outlined under 480-93-188(4)(a-e) Section 3.8.3	X			
383.		Survey records must be kept for a minimum of five years and contain information required under 480-93-188(5)(a-f) Section 3.8.13	X			
384.		Self audits as necessary, but not to exceed three years between audits and meet the criteria outlined under 480-93-188(6)(a-e) Cardinal pipeline is 100% leak surveyed at least once and at times multiple times per year. The completed surveys are reviewed internally prior to filing.	X			

Comments:

PIPELINE MARKERS PROCEDURES			S	U	N/A	N/C
385.	480-93-180(1)	Placement of markers - railroad, road, irrigation and drainage ditch crossings... 480-93-124 (1) Section 5.5.1	X			
386.		Placement of markers - Separation/Other locations... 480-93-124 (2) & 192.707 Section 5.5.1	X			
387.		Installed at each end of bridges or other spans / Inspected 1/YR (15 Months) 480-93-124 (4) Section 5.5.6	X			
388.		Markers reported missing or damaged replaced within 45 days? 480-93-124(5) Section 5.5.7	X			
389.		Surveys of pipeline markers – Not to exceed 5 YR/Records 10 Yrs minimum 480-93-124(6) Section 5.5, Procedure P-37	X			
390.		Maintain maps, drawings or other records indicating class locations and other areas where pipeline markers are required 480-93-124(7) Section 5.5, Form F-34	X			

Comments:

SUBPART - M TRANSMISSION RECORD KEEPING PROCEDURES			S	U	N/A	N/C
391.	480-93-180(1) / 192.605 (b)	Records must be maintained... .709 Section 1.11.3, Section 3.2	X			
392.		(a) Repairs to the pipe – life of system Section 1.11.3, Section 3.2	X			
393.		(b) Repairs to “other than pipe” – 5 years Section 1.11.3, Section 3.2	X			
394.		(c) Operation (Sub L) and Maintenance (Sub M) patrols, surveys, tests – 5 years or until next one Section 1.11.3, Section 3.2	X			

SUBPART - M TRANSMISSION LINE FIELD REPAIR PROCEDURES			S	U	N/A	N/C
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SUBPART - M			S	U	N/A	N/C
TRANSMISSION LINE FIELD REPAIR PROCEDURES						
Imperfections and Damages						
		Repairs of imperfections and damages on pipelines operating above 40% SMYS				
395.	480-93-180(1) / 192.605 (b)	Repairs of imperfections and damages on pipelines operating above 40% SMYS				
396.		<ul style="list-style-type: none"> Cut out a cylindrical piece of pipe and replace with pipe of \geq design strength .713(a)(1) Section 10.4 	X			
397.		<ul style="list-style-type: none"> Use of a reliable engineering method .713(a)(2) Section 10.4 	X			
398.		Reduce operating pressure to a safe level during the repair .713(b) Section 10.4	X			
Permanent Field Repair of Welds						
399.	480-93-180(1) / 192.605 (b)	Welds found to be unacceptable under §192.241(c) must be repaired by: .715				
400.		(a) Taking the line out of service and repairing in accordance with §192.245: Section 11.5.6.2	X			
401.		<ul style="list-style-type: none"> Cracks longer than 8% of the weld length (except offshore) must be removed Section 11.5.6.2(a) 	X			
402.		<ul style="list-style-type: none"> For each weld that is repaired, the defect must be removed down to clean metal and the pipe preheated if conditions demand it Section 11.5.6.2(b) 	X			
403.		<ul style="list-style-type: none"> Repairs must be inspected to ensure acceptability Section 11.5.6.2(c) 	X			
404.		<ul style="list-style-type: none"> Crack repairs or defect repairs in previously repaired areas must be done in accordance with qualified written welding procedures Section 11.5.6.1 	X			
405.		(b) If the line remains in service, the weld may be repaired in accordance with §192.245 if:				
406.		<ul style="list-style-type: none"> The weld is not leaking (1) Section 11.5.6.3(a) 	X			
407.		<ul style="list-style-type: none"> The pressure is reduced to produce a stress that is 20% of SMYS or less (2) Section 11.5.6.3(b) 	X			
408.		<ul style="list-style-type: none"> Grinding is limited so that 1/8 inch of pipe weld remains (3) Section 11.5.6.3(c) 	X			
409.		<ul style="list-style-type: none"> If the weld cannot be repaired in accordance with (a) or (b) above, a full encirclement welded split sleeve must be installed (c) Section 11.5.6.3(d) 	X			
Permanent Field Repair of Leaks						
410.	480-93-180(1) / 192.605 (b)	Field repairs of leaks must be made as follows: .717				
411.		<ul style="list-style-type: none"> Replace by cutting out a cylinder and replace with pipe similar or of greater design (a) Section 10.2 	X			
412.		<ul style="list-style-type: none"> Install a full encirclement welded split sleeve of an appropriate design unless the pipe is joined by mechanical couplings and operates at less than 40% SMYS (b)(1) Section 10.2 	X			
413.		<ul style="list-style-type: none"> A leak due to a corrosion pit may be repaired by installing a bolt on leak clamp (b)(2) Section 10.2 	X			
414.		<ul style="list-style-type: none"> For a corrosion pit leak, if a pipe is not more than 40,000 psi SMYS, the pits may be repaired by fillet welding a steel plate. The plate must have rounded corners and the same thickness or greater than the pipe, and not more than 1/2D of the pipe size (b)(3) 			X	
415.		<ul style="list-style-type: none"> Submerged offshore pipe or pipe in inland navigable waterways may be repaired with a mechanically applied full encirclement split sleeve of appropriate design (b)(4) 			X	
416.		<ul style="list-style-type: none"> Apply reliable engineering method (b)(5) Section 10.2 	X			
Testing of Repairs						
417.	480-93-180(1) / 192.605 (b)	Replacement pipe must be pressure tested to meet the requirements of a new pipeline .719(a) Section 10.6.2	X			
418.		(b) For lines of 6-inch diameter or larger and that operate at 20% or more of SMYS , the repair must be nondestructively tested in accordance with §192.241(c) Section 10.6.4	X			

SUBPART - M	S	U	N/A	N/C
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DISTRIBUTION SYSTEM PATROLLING & LEAKAGE SURVEY PROCEDURES							
419.	480-93-180(1) / 192.605 (b)	Frequency of patrolling mains must be determined by the severity of the conditions which could cause failure or leakage (i.e., consider cast iron, weather conditions, known slip areas, etc.) .721(a)			X		
420.		Patrolling surveys are required in business districts at intervals not exceeding 4½ months, but at least four times each calendar year .721 (b)(1)			X		
421.		Patrolling surveys are required outside business districts at intervals not exceeding 7½ months, but at least twice each calendar year .721 (b)(2)			X		
422.		Periodic leak surveys determined by the nature of the operations and conditions. .723 (a)& (b)			X		
423.		In business districts as specified, 1/yr (15 months) .723(b)(1)			X		
424.		Outside of business districts as specified, once every 5 calendar years/63 mos.; for unprotected lines subject to .465(e) where electrical surveys are impractical, once every 3 years/39 mos. .723 (b)(2)			X		

SUBPART - M				S	U	N/A	N/C
TEST REQUIREMENTS FOR REINSTATING SERVICE LINES							
425.	480-93-180(1) / 192.605 (b)	Except for .725(b), disconnected service lines must be tested the same as a new service line. .725(a)			X		
426.		Service lines that are temporarily disconnected must be tested from the point of disconnection, the same as a new service line, before reconnect. See code for exception to this. .725(b)			X		

Comments:

Item 414 – Cardinal does not do this type of repair
Item 415 – Cardinal has no offshore pipelines
Item 419-424 – Cardinal has no distribution system
Item 425-426 – Cardinal has no service lines

SUBPART - M				S	U	N/A	N/C
ABANDONMENT or DEACTIVATION of FACILITIES PROCEDURES							
427.	480-93-180(1) / 192.605 (b)	Operator must disconnect both ends, purge, and seal each end before abandonment or a period of deactivation where the pipeline is not being maintained. Offshore abandoned pipelines must be filled with water or an inert material, with the ends sealed .727(b) Section 6.7	X				
428.		Except for service lines, each inactive pipeline that is not being maintained under Part 192 must be disconnected from all gas sources/supplies, purged, and sealed at each end. .727 (c) Section 6.7	X				
429.		Whenever service to a customer is discontinued, do the procedures indicate one of the following: .727(d)					
430.		The valve that is closed to prevent the flow of gas to the customer must be provided with a locking device or other means designed to prevent the opening of the valve by persons other than those authorized by the operator .727(d) (1)			X		
431.		A mechanical device or fitting that will prevent the flow of gas must be installed in the service line or in the meter assembly .727(d)(2)			X		
432.		The customer’s piping must be physically disconnected from the gas supply and the open pipe ends sealed .727(d) (3)			X		
433.		If air is used for purging, the operator shall ensure that a combustible mixture is not present after purging .727 (e) Section 6.7	X				
434.		Abandoned vaults filled with suitable compacted materials .727(f)			X		
435.		Operator must file reports upon abandoning underwater facilities crossing navigable waterways, including offshore facilities. .727(g)			X		

Comments:

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Item 429-432 – Cardinal has no gas customers
 Item 434 – Cardinal has no vaults
 Item 435 – Cardinal has no underwater facilities

.605(b)	SUBPART - M COMPRESSOR STATION PROCEDURES <i>*Cardinal has no compressor stations*</i>	S	U	N/A	N/C
.605(b)(6)	Maintenance procedures, including provisions for isolating units or sections of pipe and for purging before returning to service			X	
.605(b)(7)	Starting, operating, and shutdown procedures for gas compressor units			X	
.731	Inspection and testing procedures for remote control shutdowns and pressure relieving devices (1 per yr/15 months), prompt repair or replacement			X	
.735	(a) Storage of excess flammable or combustible materials at a safe distance from the compressor buildings			X	
	(b) Tank must be protected according to NFPA #30 ; Amdt 192-103 pub. 06/09/06 eff. 07/10/06.			X	
.736	Compressor buildings in a compressor station must have fixed gas detection and alarm systems (must be performance tested), unless:			X	
	▪ 50% of the upright side areas are permanently open, or			X	
	▪ It is an unattended field compressor station of 1000 hp or less			X	

		SUBPART - M PRESSURE LIMITING and REGULATING STATION PROCEDURES	S	U	N/A	N/C
436.	480-93-180(1) / 192.605 (b)	Inspection and testing procedures for pressure limiting stations, relief devices, pressure regulating stations and equipment (1 per yr/15 months) .739(a) Section 3.10.1	X			
437.		In good mechanical condition .739(a) (1) Section 3.10.1(a)	X			
438.		Adequate from the standpoint of capacity and reliability of operation for the service in which it is employed .739(a)(2) Section 3.10.1(b)	X			
439.		Set to control or relieve at correct pressures consistent with .201(a), except for .739(b). .739(a) (3) Section 3.10.1(c)	X			
440.		Properly installed and protected from dirt, liquids, other conditions that may prevent proper oper. .739(a)(4) Section 3.10.1(d)	X			
441.		For steel lines if MAOP is determined per .619(c) and the MAOP is 60 psi gage or more739(b)				
442.	480-93-180(1) / 192.605 (b)	If MAOP produces hoop stress that				
		Is greater than 72 percent of SMYS			X	
		Is unknown as a percent of SMYS				
443.	480-93-180(1) / 192.605 (b)	Then the pressure limit is: MAOP plus 4 percent				
444.		A pressure that will prevent unsafe operation of the pipeline considering its operating and maintenance history and MAOP				
		Pressure limiting and regulating stations: Telemetering or recording gages 192.741(a) thru (c)			X	
		Testing of Relief Devices - Procedures for ensuring, either by testing or a review of calculations, at intervals not exceeding 15 months, but at least once each calendar year, that the capacity of each pressure relief device at pressure limiting stations and pressure regulating stations has sufficient capacity, and for installing a new or additional device if a relief device is determined to have insufficient capacity. .743 (a) thru (c)			X	

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Comments:

Item 441-442 – Cardinal’s pipeline operates <72% SMYS
 Item 443 – Cardinal has no distribution systems
 Item 444 – Cardinal has no pressure relief devices

SUBPART - M			S	U	N/A	N/C
VALVE AND VAULT MAINTENANCE PROCEDURES						
445.	480-93-180(1) / 192.605 (b)	Written valve maintenance program detailing the valve selection process, inspection, maintenance, and operating procedures. The written program must detail which valves will be maintained under 49 CFR § 192.745, 49 CFR § 192.747, and 480-93-100. 480-93-100(1) Section 3.9	X			
Transmission Valves						
446.	480-93-180(1) / 192.605 (b)	Inspect and partially operate each transmission valve that might be required during an emergency (1 per yr/15 months) .745(a) Section 3.9.2	X			
447.	192.605 (b)	Prompt remedial action required, or designate alternative valve .745(b) Section 3.9.4	X			
Distribution Valves						
448.	480-93-180(1) / 192.605 (b)	Check and service each valve that may be necessary for the safe operation of a distribution system (1 per yr/15 months) .747(a)			X	
449.		Prompt remedial action required, or designate alternative valve .747(b)			X	
Service Valves			S	U	N/A	N/C
450.	480-93-180(1) / 192.605 (b)	Written service valve installation and maintenance program detailing the valve selection process, inspection, maintenance, and operating procedures. Does the program consider the criteria listed under 480-93-100(2)(a-f)?			X	
451.	192.605 (b)	Service valve maintenance (1 per yr/15 months) 480-93-100(3)			X	
452.		Service valve installation and maintenance program fully implemented by 6/01/07? 480-93-100(6)			X	
Vaults						
453.	480-93-180(1) / 192.605 (b)	Inspection of vaults greater than 200 cubic feet (1 per yr/15 months) .749			X	

SUBPART - M			S	U	N/A	N/C
PREVENTION of ACCIDENTAL IGNITION PROCEDURES						
454.	480-93-180(1) / 192.605 (b)	Reduce the hazard of fire or explosion by: (a) When a hazardous amount of gas is being vented into open air, each potential source of ignition must be removed from the area and a fire extinguisher must be provided. (b) Gas or electric welding or cutting may not be performed on pipe or on pipe components that contain a combustible mixture of gas and air in the area of work. (c) Post warning signs, where appropriate. 192.751 (a) thru (c) Section 6.1	X			

Comments:

Item 448-449 – Cardinal has no distribution systems
 Item 450-452 – Cardinal has no service valves
 Item 453 – Cardinal has no vaults

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SUBPART - M			S	U	N/A	N/C
CAULKED BELL AND SPIGOT JOINTS PROCEDURES						
455.		Cast-iron caulked bell and spigot joint repair: .753			X	
456.	480-93-180(1) / 192.605 (b)	<ul style="list-style-type: none"> When subject to more than 25 psig, sealed with mechanical clamp, or sealed with material/device which does not reduce flexibility, permanently bonds, and seals and bonds as prescribed in §192.753(a)(2)(iii) .753(a) 			X	
457.		<ul style="list-style-type: none"> When subject to 25 psig or less, joints, when exposed for any reason, must be sealed by means other than caulking .753(b) 			X	

SUBPART - M			S	U	N/A	N/C
PROTECTING CAST-IRON PIPELINE PROCEDURES						
458.	480-93-180(1) / 192.605 (b)	Operator has knowledge that the support for a segment of a buried cast-iron pipeline is disturbed must provide protection. .755				
459.		<ul style="list-style-type: none"> Vibrations from heavy construction equipment, trains, trucks, buses or blasting? .755(a) 			X	
460.		<ul style="list-style-type: none"> Impact forces by vehicles? .755(b) 			X	
461.		<ul style="list-style-type: none"> Earth movement? .755(c) 			X	
462.		<ul style="list-style-type: none"> Other foreseeable outside forces which might subject the segment of pipeline to a bending stress .755(d) 			X	
463.		Provide permanent protection for the disturbed section as soon as feasible .755(e)			X	

Comments:
[Item 455-463 – Cardinal has no cast iron caulked bell joints, spigot joints and pipeline](#)

SUBPART N — QUALIFICATION of PIPELINE PERSONNEL			S	U	N/A	N/C
Date of last UTC staff OQ plan review September 16-17, 2013						
464.	192.801 192.809	Any revisions to plan since last review? Yes No X If yes, review revisions made.	X			
465.	480-93-180(1)	Have “New Construction” activities been identified and included in the operator’s covered task list? 480-93-013 OQM Section 4.2.1.b	X			

Comments:

FILING REQUIREMENTS for DESIGN, SPECIFICATION, and CONSTRUCTION			S	U	N/A	N/C
466.	480-93-180(1)	Submittal of construction procedures, designs, and specifications used for each pipeline facility prior to operating the pipeline. All procedures must detail the acceptable types of materials, fittings, and components for the different types of facilities in the operator's system. 480-93-017(1) Section 9.2.6	X			
467.	480-93-180(1)	Construction plans not conforming with a gas company's existing and accepted construction procedures, designs, and specifications on file with the commission, submitted to the	X			

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		commission for review at least forty-five days prior to the initiation of construction activity. 480-93-017(2) Section 9.2.6				
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MAPS, DRAWINGS, and RECORDS of GAS FACILITIES			S	U	N/A	N/C
468.	480-93-180(1)	Records updated no later than 6 months from completion of construction activity and made available to appropriate personnel. 480-93-018(3) Section 1.11.1(e)	X			

PROXIMITY CONSIDERATIONS			S	U	N/A	N/C
469.	480-93-180(1)	Each operator must submit a written request and receive commission approval prior to: Operating any gas pipeline facility at greater than five hundred psig that is within five hundred feet of any of the following places: 480-93-20 (1)(a) <ul style="list-style-type: none"> • A building that is in existence or under construction prior to the date authorization for construction is filed with the commission, and that is not owned and used by the petitioning operator in its gas operations; or : 480-93-20 (1)(a)(i) • A high occupancy structure or area that is in existence or under construction prior to the date authorization for construction is filed with the commission; or : 480-93-20(1)(a)(ii) • A public highway, as defined in RCW 81.80.010(3). 480-93-20 (1)(a)(iii) Section 2.5.2 	X			
470.	480-93-180(1)	Operating any gas pipeline facility at greater than two hundred fifty psig, up to and including five hundred psig, that is operated within one hundred feet of either of the following places: 480-93-20(1)(b) <ul style="list-style-type: none"> • A building that is in existence or under construction prior to the date authorization for construction is filed with the commission, and that is not owned and used by the petitioning operator in its gas operations; or: 480-93-20(1)(b)(i) • A high occupancy structure or area that is in existence or under construction prior to the date authorization for construction is filed with the commission. 480-93-20(1)(b)(ii) For proposed new construction, document evidence to demonstrate that it is not practical to select an alternate route that will avoid areas or which demonstrates that the operator has considered future development of the area and has designed their pipeline facilities accordingly. 480-93-20(2) Section 2.5.2	X			

Comments:

Attachment 1
Alternative Maximum Allowable Operating Pressure

For additional guidance refer to <http://primis.phmsa.dot.gov/maop/faqs.htm>
For FAQs refer to <http://primis.phmsa.dot.gov/maop/faqs.htm>

192.620	Alternative MAOP Procedures and Verifications *Cardinal did not use this method to determine MAOP*	S	U	N/A	N/C
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Utilities and Transportation Commission
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	The alternative MAOP is calculated by using different factors in the same formulas used for calculating MAOP in §192.619. In determining the alternative design pressure under §192.105 use a design factor determined in accordance with §192.111(b), (c), or (d), or, if none of these apply in accordance with:					
	Class Location	Alternative Design Factor (F)				
	1	0.80				
	2	0.67				
	3	0.56				
.620(a)	(1)	Establish alternative MAOP commensurate with class location – no class 4				X
	(2)	MAOP cannot exceed the lowest of the following:				
		(i) Design pressure of the weakest element				X
		(ii) Test pressure divided by applicable factor				X
.620(b)	(2)	Pipeline constructed of steel pipe meeting additional requirements in §192.112.				X
	(3)	SCADA system with remote monitoring and control				X
	(4)	Additional construction requirements described in §192.328				X
	(5)	No mechanical couplings				X
	(6)	No failures indicative of systemic material fault – if previously operated at lower MAOP				X
	(7)	95% of girth welds have NDT				X
	.620(c)	(1)	PHMSA notified 180 days before operating at alternative MAOP			
(2)		Senior Executive signatures and copy to PHMSA				X
(4)		Strength test per §192.505 or certify previous strength test				X
(6)		Construction tasks treated as covered tasks for Operator Qualification				X
(7)		Records maintained for life of system				X
(8)		Class location change anomaly remediations				X
.620(d)	(1)	Threat matrix developed consistent with §192.917				X
	(2)	Recalculate the potential impact circle per §192.903 and implement public education per §192.616				X
	(3)	Responding to an emergency in an HCA				
		(i) Identify HCAs using larger impact circle				X
		(ii) Check personnel response times				X
		(iii) Verify remote valve abilities				X
		(iv) Verify line break valve control system				X
	(4)	Protect the right-of-way:				
		(i) ROW patrols 12 per year not to exceed 45 days				X
		(ii) Plan to identify and mitigate unstable soil				X
		(iii) Replace loss of cover if needed				X
		(iv) Use line-of-sight markers per §192.707				X
		(v) Review damage prevention program in light of national consensus practices				X
		(vi) ROW management plan to protect against excavation activities				X
	(5)	Control Internal Corrosion:				
	(i) Program to monitor gas constituents				X	
	(ii) Filter separators if needed				X	
	(iii) Gas Monitoring equipment used				X	
	(iv) Cleaning pigs, inhibitors, and sample accumulated liquids					
.620(d)	(v)	Limit CO ₂ , H ₂ S, and water in the gas stream				X

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192.620	Alternative MAOP Procedures and Verifications	S	U	N/A	N/C
	Cardinal did not use this method to determine MAOP				
	(vi) Quarterly program review based on monitoring results			X	
(6)	(i) Control interference that can impact external corrosion			X	
	(ii) Survey to address interference currents and remedial actions			X	
(7)	Confirm external corrosion control through indirect assessment			X	
	(i) Assess adequacy of CIS and perform DCVG or ACVG within 6 months				
	(ii) Remediate damage with IR drop > 35%			X	
	(iii) Integrate internal inspection results with indirect assessment			X	
	(iv) Periodic assessments for HCAs			X	
	(A-C) Close interval surveys, test stations at ½ mile intervals, and integrate results				
(8)	Cathodic Protection			X	
	(i) Complete remediations within 6 months of failed reading				
	(ii) Confirm restoration by a close interval survey			X	
	(iii) Cathodic protection system operational within 12 months of construction completion			X	
(9)	Baseline assessment of integrity			X	
	(i)(A) Geometry tool run within 6 months of service				
	(i)(B) High resolution MFL tool run within 3 years of service			X	
	(ii) Geometry and MFL tool 2 years prior to raising pressure for existing lines			X	
	(iii) If short portions cannot accommodate tools, use direct assessment per §192.925, 927, 929 or pressure testing			X	
(10)	Periodic integrity assessments			X	
	(i) Frequency for assessments determined as if all segments covered by Subpart O				
	(ii) Inspect using MFL tool or direct assessment per §192.925, 927, 929 or pressure testing.			X	
(11)	Repairs			X	
	(i)(A) Use of the most conservative calculation for anomaly remaining strength				
	(B) Tool tolerances taken into consideration			X	
	(ii) Immediate repairs for:			X	
	(A) Dents meeting 309(b) criteria				
	(B) Defects meeting immediate criteria in §192.933(d)			X	
	(C) Calculated failure pressure ratio less than 1.25 for .67 design factor			X	
	(D) Calculated failure pressure ratio less than 1.4 for .56 design factor			X	
	(iii) Repairs within 1 year for:			X	
	(A) Defects meeting 1 year criteria in 933(d)				
	(B) Calculated failure pressure ratio less than 1.25 for .80 design factor			X	
	(C) Calculated failure pressure ratio less than 1.50 for .67 design factor			X	
	(D) Calculated failure pressure ratio less than 1.80 for .56 design factor			X	
	(iv) Evaluate defect growth rate for anomalies with > 1 year repair interval and set repair interval			X	
.620(e)	(1) Provide overpressure protection to a max of 104% MAOP			X	
	(2) Procedure for establishing and maintaining set points for SCADA			X	

Comments:

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Comments:

PHMSA Advisory Bulletins, go to <http://phmsa.dot.gov/pipeline/regs/advisory-bulletin>